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FOREST SERVICE

1934

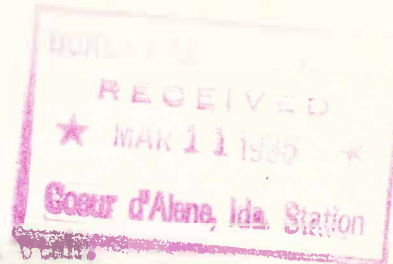
73

ANNUAL FOREST INSECT STATUS REPORTS
WASATCH NATIONAL FOREST



S
Insect Control - Wasatch
Spring - 1934

Salt Lake City, Utah.
October 15, 1934.



INSECT CONTROL REPORT OF WORK COMPLETED ON THE
WASATCH NATIONAL FOREST DURING THE SPRING OF
1934.

Reference is made to our "S-Insect Control - Fall Survey 1933 Report" and to attached copies of control reports submitted by the project managers.

INTRODUCTION:

As early in the spring as it was thought effective, control work could be done, camps were established on the Kamas, Blackfork and Granddaddy Lakes Districts.

Each camp was under the direct supervision of a project manager who was responsible for all work done on each district. These project managers were as follows: Kamas District - Owen DeSpain; Blackfork District - A. P. Balch; and Granddaddy Lakes District - Ned Millard.

Each crew consisted of an experienced foreman, five or six spotters and burners, and one packer with three pack and one saddle horse. A strip one chain wide was carried by each man except the outside wing man, who dropped a paper control line and covered a one-half chain strip. Good crew organization prevailed and very effective work was done.

KAMAS DISTRICT:

Foreward:

Camp was established at the mouth of North Fork Creek and actual control work was commenced on April 13 with four burning crews. The plans were to treat the lower areas first and work progressively up the river with the receding snow.

The season was very dry due to a very light snowfall the previous winter and no storms of importance occurring during the period of operation. Much of the crew's time was consumed in preventing and controlling fires. Constant alertness by the entire

Copy for information Mr. Evenden

organization and the establishment of fire patrol on extremely hazardous areas prevented any outbreak of fire although a critical fire condition prevailed throughout most of the period of the operation.

BEAVER CREEK UNIT #2:

Based on the survey conducted in the fall of 1933 control work was commenced on April 13 with four burning crews. Camp was established at the junction of North Fork and the Canyon road. The men were hauled a distance of about four miles to work.

Snow was encountered when the work was first started but exceedingly dry warm weather caused the snow to recede very rapidly.

The fall estimate showed 632 new attacks in the unit, and 926 trees were treated.

It is believed that all areas in an epidemic stage were treated.

SHINGLE CREEK - NORTH FORK UNIT:

This unit was worked from the main camp established at the North Fork bridge which is centrally located in the unit. Treatment was confined to infested areas adjoining the road and back for an average of three miles. An attempt was made to reach the infested areas in Norway Flats and Upper Boulder Creek; but as these areas were from four to six miles from the camp, they were left with the intentions of establishing a small camp nearer these areas later. The infestations in these upper fingers of the unit were comparatively light and, therefore, in order to treat as many trees as possible before fire hazards became too great for reasonably safe burning, work was concentrated in more heavily infested areas. The extreme fire hazard later prevented the possibility of returning to this unit to treat the scattered infested trees. A total of 713 trees were treated in the unit.

PROVO RIVER UNIT:

On May 6, camp was moved from North Fork to the Shady Bell Camp. This site was centrally located and by transporting crews by truck along the Canyon road, all the unit could be reached.

A concentration of crews was effected in order to finish the area in Spring Canyon not treated the previous fall, and the area on the south side of the canyon. Crews were in operation on May 11, and much time was being spent in controlling and preventing fires. In order to rush the work as fast as possible, two organized crews from the Granddaddy Lakes District were transferred to this

camp and from forty to fifty C.C.C. men were obtained from the Soapstone C.C.C. Camp F-7, which had recently arrived. Burning was continued until May 19 when most of the men were called onto a fire in Weber River (not caused by insect control work) and all burning was discontinued due to the high fire hazard.

Two men were kept on fire patrol until June 1, and no serious fires resulted.

A felling crew of picked experienced men was organized, and with thirty C.C.C. men, continued control work by felling and peeling infested trees. This work was discontinued on June 20 due to the heavy emergence of the beetles.

A total of 6,121 trees were treated in this unit. It was indicated by observations during the project that the increase had been as high as five new attacks to one attack of the previous season.

As it was not possible to treat all the infested areas, the infestation shown by the survey this fall is accountable.

WEST FORK OF SMITHS FORK UNIT #1:

Nearly all work done in this unit was confined to isolated areas not previously treated. It was planned to treat this area with C.C.C. men in the spring of 1933. Due to the inexperience of the men, and other prohibitive conditions, the area was never completely treated.

The control camp was centrally located in the area and it is believed a very effective job of treating was done.

HORSE CREEK UNIT #2:

No control work was deemed necessary in this unit.

BLACKS FORK UNIT #3:

This area has been difficult to clean up 100% in the past year. Most of the attacks found this year were light except in small isolated groups that had been missed in previous years. Numerous signs of predators were noticed, and with this work completed, it is believed the area is free from any epidemic condition of infestation.

WEST FORK BLACKSTONE UNIT #4:

A rather large area was treated with no alarming attacks found. The infested trees were somewhat scattered and the attack weak. The southern end of the area was treated by felling and peeling after the fire hazard was prohibitive to further burning.

DRY WEST FORK UNIT #5:

The hot spots found in this unit were confined largely to untreated areas adjoining areas treated in previous years. It was necessary to fell most of the trees due to their large size.

GRANDDADDY LAKES DISTRICT:

Please refer to "Fall Insect Survey Report 1933 for Kansas and Granddaddy Lakes Districts."

LOWER ROCK CREEK UNIT #1:

All the work done on this district was confined to this unit. Based on the previous fall survey, the Miners and Peterson Gulch areas were treated by a two crew camp under the supervision of Junior Forester Millard. The work was very effective as shown by the 1934 fall survey. An area in McFee basin containing about 450 trees is recommended for treatment next spring.

GENERAL:

An area in Upper Rock Creek Unit #3 containing 445 trees and one in the Duchesne Unit #7 containing 510 new attacks were recommended for treatment in the 1933 fall survey report. These areas were left untreated due to a dry season, the camp from this unit being transferred to the Kansas District on May 13, when it was found that it was not going to be possible to treat all the infested area before fire hazards became too extreme. As it was important that all possible control work be completed on Provo River, it was decided to discontinue work on the Granddaddy Lakes District and transfer the crews to Provo River for control work.

C. J. OLSEN, Forest Supervisor.

COST INSECT PROJECT - WASATCH NATIONAL FOREST - SPRING, 1934

Inclusive dates work carried on - April 13 to June 20

This report made - October 10, 1934

Insect Responsible - D. monticolae

C. J. Olsen
Forest Supervisor

Classification	Contributed time and expenses	PROJECT FUNDS			Total Costs
		S&E	Immira	ECW	
Salaries & wages :					
Forest Officers :	462.26	4763.53	2772.93	7.44	8006.21
Subsistence :		1290.51	277.33		1568.34
Equipment :		119.83	32.34	55.04	207.21
Oil :		281.14	44.58	198.73	524.45
Hauling Gov. Trucks:		95.90	193.64		289.54
Horse Hire :		290.04	70.20		361.14
Horse Feed :		438.70	32.36		521.06
Miscellaneous :		131.34	105.23	54.59	271.66
Totals :	462.26	7462.44	3529.11	295.80	11749.61

No. man days contributed: 33 1/2

No. man days paid from project funds: ~~2207 1/2~~ 2230
No man days ECC Labor - 604
Total man days used: ~~2291~~ 2916 1/2

INSECT CONTROL REPORT - MAMAS DISTRICT - SPRING 1934

1. Year - 1934.
2. Names of Unit:

Unit No.	Unit Name
2	Beaver Creek
3	Shingle Creek - North Fork
4	Provo River
3. Wasatch National Forest
4. Duration April 13 to June 20 (Inclusive of May 23 to June 20 peeling)
5. Lodgepole Pine
6. *Dendroctonus monticolae*
7.

Burned Standing -----	4,408
Felled and Burned -----	2,305
Felled and Peeled -----	1,051
Total -----	<u>7,764</u>
8. Acres Treated:

Unit 2 - Beaver Creek -----	2,200
Unit 3 - Shingle Creek - North Fork -----	1,300
Unit 4 - Provo River -----	2,700
Total Acres Treated -----	<u>6,200</u>
9. Number Trees Treated:

Unit 2 - Beaver Creek -----	925
Unit 3 - Shingle Creek - North Fork -----	713
Unit 4 - Provo River -----	6,121
Total -----	<u>7,764</u>
10. Provo River #4 -- 43%
 Shingle Cr. N. Fork #3 23%
 Beaver Creek #2 -- 23%
11. Expenditures - \$9,438.12
12. \$139.37
13. Total Cost of Project - \$9,577.49
14. Total Cost per Tree - \$1.23
15. Total Cost per Acre - \$1.55
16. Gallons of Oil Used per Tree - .3 gallons
17. Number of man days used - 1,669 - Experienced men
 ~~151~~ - CCC Man days
 604

18. None.

19. Successful on areas treated

Note: Numbers correspond to numbered headings on atlas size
Form R-4, FM - I.C.1

NARRATIVE SECTION

Beaver Creek Unit:

The entire area in this unit considered in an epidemic stage was covered. The area treated was readily accessible from the Canyon road, with the exception of the Upper Setting Creek area which is located some distance from the highway, adding to the expense of treating.

Most of the area covered was of a southern exposure which added to the fire hazard and slowed somewhat the progress of the crews.

The attacks were heavy but somewhat scattered.

Shingle Creek - North Fork Unit:

All area considered in an epidemical stage in this unit was treated with the exception of a small area in Section 16 between Boulder and North Fork Creeks and an area in the vicinity of Norway Flats. It was planned to reach these areas later from a fly camp but weather conditions were prohibitive.

The attacks were scattered but heavy, averaging 15 feet in height.

INSECT CONTROL REPORT - GRANDDADY LAKES DISTRICT, WASATCH NATIONAL FOREST
SPRING, 1934.

1. Year - 1934
2. Names of Units:
Unit #1 - Lower Rock Creek
3. Wasatch National Forest
4. Duration - April 15 to May 12
5. Lodgepole Pine
6. *Dendroctonus monticolae*
7. Burned Standing ----- 214
Felled and Burned ----- 311
Total ----- 525 trees
8. Acres treated: Unit #1 - Lower Rock Creek ----- 700
9. Number trees treated: 525
10. 50% Felled.
11. Expenditures: \$1,072.93
12. \$185.25
13. Total cost of project - \$1,258.23
14. Total cost per tree - \$2.39
15. Total cost per acre - \$1.80
16. Gallons of oil used per tree ---- .6 gallons
17. Number of man days used --- 273 1/2
18. Per cent reduction - 84%
19. Results: Successful on areas treated.
Note: Numbers correspond to numbered headings on atlas also
Form R-4, FM - I.C.1

NARRATIVE SECTION:

The control work done on the Granddaddy Lakes District was confined entirely to the Lower Rock Creek Unit No. 1. The work was concentrated in the Peterson Gulch and Miners Gulch areas. Control work was planned in the Upper Rock Creek Unit #3, but conditions were prohibitive.

These areas treated were very rough making the transportation of oil difficult. The infestations were heavy but confined mostly to small trees.

This fall's survey indicates effective control work was done in these two areas, but a mild epidemical condition still exists in the McAffee Basin area.

C. J. OLSEN, Forest Supervisor.



Insect Control - Wasatch
Fall Survey - 1934

Salt Lake City, Utah.
October 16, 1934.

WSS

INSECT SURVEY REPORT - FALL 1934.

Following is submitted a brief summary of the insect infestation on the Wasatch National Forest. While detailed reports of the surveys conducted on this Forest are attached as part of this report, only the most pertinent parts are noted here.

SALT LAKE AND AMERICAN FORK DISTRICTS:

These districts are entirely free from any epidemic conditions of insect infestation.

KAMAS DISTRICT:

Beaver Creek Unit #2.

Control work was conducted in this unit last spring and all areas considered in an epidemic stage were treated.

The fall survey would indicate that there has been a very rapid increase in new attacks within the untreated areas. The attacks found on strip lines were scattered and confined largely to scattered lodgepole stands and isolated groups. Only in one small area is there indications of an epidemical outbreak, that being in Section 34 and 35 on the south side of the canyon and within an area treated last spring. There were indications of a poor job of treating due to improper supervision by the crew foreman. This area is close to the road and can be further investigated to determine if treatment is necessary in which case this work can be done in connection with one of the other units.

Shingle Creek - North Fork Unit #3.

The epidemical infestations on this unit are confined to the areas not treated last spring. These are isolated areas in the vicinity of Norway Plate and in the upper drainages of Boulder

and North Fork Creeks. As these areas were from four to six miles from the main camp, they were left with the intentions of establishing a small camp nearer to them later but the extreme dry spring that prevailed made later treating impossible.

The unit as a whole shows a total of 1,618 new attacks. Inasmuch as most of the new attacks found on strip lines were confined to the untreated areas mentioned above, it is doubtful if there are over 1,000 new attacks in the unit to be treated.

Provo River Unit.

The extremely light winters followed by abnormally dry springs have been detrimental to complete clean-up work in the past. The rough topography has also slowed the progress of the work.

On June 20, 1933, it was discovered the area of infestation being treated in Spring Canyon was much larger than previously supposed. Every effort was made to complete the project while weather conditions permitted. Two organized crews from Blacks Fork were transferred to this job together with two crews from Kemas. The use of C.C.C. labor was continued to the fullest extent possible. Later investigations indicated the work was of a low standard due to poor supervision and the inexperience of the men. Many trees had been missed and some not burned to the full height of infestation.

In the spring of 1934, a very abnormal dry season prevailed and the progress of the crews was greatly retarded from the start. Burning was continued long after the fire hazard had reached a very dangerous point. After burning was discontinued on May 19, over 300 trees were peeled before the flight of the beetle. It was necessary to leave many areas of infestation that were known to exist within the unit.

That conditions have been very favorable for spread of infestation during the past year is indicated by an increase of as high as one to thirty new attacks in some areas with a normal average of about one to ten in most of the infestations. This abnormal increase accounts for finding epidemic conditions in treated areas adjoining areas untreated.

The areas found in an epidemic stage throughout the Provo River are much removed from each other therefore it is quite obvious that the spread has not been from one central area of infestation

but spread into existence locally.

RECOMMENDATIONS:

With boundaries of infestation definitely known at the present time very efficient results can be expected by concentrating on these epidemical areas. Trails constructed by C.C.C. labor during the past season will aid greatly in the transportation of oil.

The species of timber involved are lodgepole pine (*Pinus contorta*) and the insect responsible for the damage is Mountain Pine Beetle (*Dendroctonus monticolae*).

As indicated in the attached reports of "Fall Insect Survey" we recommend that control work be initiated in the following units during the fall of 1934 and completed in the spring of 1935.

<u>Unit No.</u>	<u>Unit</u>
3	Shingle Creek - North Fork
4	Provo River

The map submitted as part of this report shows the location of control units and area in each unit considered in need of treating.

Sufficient equipment is available on the Hannas District to conduct this control work.

Following is shown areas to be treated and estimated costs:

<u>Unit</u>	<u>Estimated Acreage</u>	<u>Estimated No.</u>	<u>Estimated</u>
<u>Shingle Creek</u>	<u>to be treated</u>	<u>trees to be treated</u>	<u>sums needed</u>
North Fork,	1,500	1,000	\$1,000
Provo River	10,000	13,000	13,000
		<u>Total</u>	<u>\$17,000</u>

BLACKSPRINK DISTRICT:

A report of the insect survey is here attached. While there are estimated to be 2,500 new attacks within this district, Ranger Hann recommends treating of only 2,250 trees due to the scattered conditions of the new attacks and the evidence of numerous predators.

The epidemical infestation in this district is confined to the Blacksprink Unit (No. 3) and the West Fork Unit (No. 4).

The infestation of Mountain Pine Beetle in Lodgepole pine is responsible for the damages being done.

Recommendations are made for control work to be done in the following units this fall, weather conditions permitting, or otherwise next spring.

<u>Unit No.</u>	<u>Unit</u>
3	Blackfoot
4	West Fork

Maps are submitted as part of this report showing location of units and areas in each unit to be treated.

Sufficient equipment is available to complete the job.

Estimated funds needed:

Unit #3	\$2,000
Unit #4	250
Total	\$2,250

GRANDDADY LAKE DISTRICT:

A detailed report of the survey conducted on this district is attached as part of this report.

Infestations that are alarming in this district are confined to the Duchesne, Upper Rock Creek and Lower Rock Creek units.

The Iron Mine area is part of the Duchesne Unit #7 and a total of 2,516 new attacks are estimated to be treated in this area. An increase of five to one is noted during the period between the 1933 and 1934 surveys. This is for the area as a whole while perhaps local infestations have been much greater.

There are approximately 1,516 trees to be treated in the Upper Rock Creek Unit and 443 in Moffe Basin of the Lower Rock Creek Unit.

The Peterson Gulch and Mine Gulch areas where control work was done last spring are considered entirely in an endemic stage. Most of the new attacks found in the Granddady Lake Unit #8 were confined to a small area in Marcell Canyon. The unit is still in an endemic stage with 551 N.A. or 1 N.A. per 26.3 acres.

RECOMMENDATION:

Units to be created are:

Unit No.
1
2
3

Unit
Lower Rock Creek
Upper Rock Creek
Proposed

Maps are submitted showing the location of the installations.

Sufficient equipment is now in place to conduct the control work.

Estimated funds needed:

Unit #1	Unit #2	Unit #3	Total
1,000	1,000	5,000	7,000
10,000	10,000	10,000	30,000

Summary to show insect control funds needed to complete insect control work for the entire period:

Unit #1	Unit #2	Unit #3	Total
17,000	2,200	5,100	24,300
17,000	2,200	5,100	24,300

BB-2

C. J. Olsen, Forest Supervisor

By *Elaine Coleman*

Acting

THAMES LOUNGE & RESTAURANT

Trunk type: Reddish-brown

Sept. 7 to Oct. 5, 1884.

Index of Cases

Insect causing damage - B. north-american

District: Kansas - Wichita K.F.

Letting Forest Supplanted

E. J. Olson, Forest Supervisor.

087-74

[illegible]

No.	Locality	Altitude	Aspect	Soil	Vegetation	Remarks
1	Hoyt's Canyon	No information				
2	Beaver Creek	2.0 8-24 852	1.2	Light	2,200	Small area to be treated in connection with other units.
3	Shingio Creek	1.0 8-24 764	2.0	Heavy	1,200	
4	Provo River	2.1 8-22 690	1.6	Heavy	2,700	
5	Pulliam Creek	No information				
6	Smith-Koonhouse	No information				
7	Gardner's Fork	No information				
8	Reber Unit	No information				

See S-Insect Survey Unit 1934.

16,298
9,360
5,435
3

See 8-Inch Survey July 1964.

11093
5, 1135
9360
8667

0-577

SUMMARY OF INSECT SURVEY

Timber type - Lodgepole
pineInsect causing damage - *D. monticolae*.

District: Blackfork, Wasatch N. F.

Sept. 7 to Sept. 17, 1934.
(Dates of Cruise)

C. J. Olsen, Forest Supervisor.

By Elaine Botkisson
Acting Forest Supervisor.

(1) Unit No.	(2) Name	(3) % of Cruise	(4) No. trees treated	(5) No. A. new st- tanks	(6) % of infestation	(7) Character of in- Spring 1934 Fall 1933	(8) Acres treated Spring 1934 Fall 1934	(9) Acres to be treated Spring '35 Fall 1934	(10) Estimated Cost of treating Total Per A Per Tree
1	Smiths Fork	1 1/2 to 10	F-33 None S-34 292	1140	3.8	Light F-33 None S-34 000	None	None	
2	Horse Creek	1 1/2	F-33 None S-34 None	1240	.1	Light F-33 None S-34 None	None	None	
3	Blackfork	1 1/2 to 10	F-33 None S-34 150	4000	37.0	Moderate F-33 None S-34 1000	4000	\$2,000	\$1.30 \$1.00
4	West Fork	1 1/2	F-33 None S-34 58	1920	34.3	Moderate F-33 None S-34 1100	500	250.	.50 1.00
5	Dry West Fork	1 1/2	F-33 None S-34 198	240	1.2	Light F-33 None S-34 700	None	None	
6	Buddy Creek		No infestation						

* For number trees treated in previous years. See Fall Insect Survey Report
of Blackfork District.

9360

SUMMARY OF INSECT SURVEY

Timber type: Lodgepole Pine

Insect causing damages - B. Monticolae

District: Granddaddy Lakes
Wasatch National Forest.Sept. 7 to October 5, 1934.
(Dates of Cruise)

C. J. Olson, Forest Supervisor

By John H. Wilson
Acting Forest Supervisor.

(1) Unit No.	(2) Name	(3) % of Cruises	(4) No. trees treated new Spring '34 Fall 1933	(5) No. of attacks tasks station	(6) % of infest- ation	(7) Character: Spring 1934 Fall 1933	(8) Acres treated: Spring 1934 Fall 1933	(9) Acres to be treated: Spring '35 Fall 1934	(10) Estimated Cost of treating: Total: Per A. : Per Tree
1	Lower Rock Creek	3.5	8-54-325	646	1.0	Moderate	8-34 700	640	\$ 550 0.85 \$1.00
2	Squee Basin	No infestation							
3	Upper Rock Creek	1.0	None	1,500	No trees treated in year	"	None	900	\$1,600 1.55 1.06
4	Granddaddy Lakes	2.1	None	331	"	Light	None	None	- - -
5	South Fork	No infestation							
6	Fern Creek	No infestation							
7	Duchene	3.1	None	2,800	"	Heavy	None	3,350	\$3,000 1.77 \$
8	Mirror Lake	5.5	None	498	"	Light	None	None	None

5435

4700

S
Insect Control - Wasatch
Fall Survey 1934

Salt Lake City, Utah.
October 15, 1934.

INSECT SURVEY REPORT FOR THE KAMAS AND GRANDDADDY LAKES DISTRICTS
FALL - 1934.

INTRODUCTION:

Following is a report of the findings of the insect survey conducted on the Kamas and Granddaddy Lakes Districts of the Wasatch National Forest. The following units have been covered and are reported herein; namely, Provo River, Shingle Creek - North Fork, Beaver Creek, Mirror Lake, Granddaddy Lakes, Rock Creek, Duchesne, and Weber River.

The cost of the project was \$466.00, with no contributed time.

METHODS:

"Methods of Conducting Extensive Survey of Mountain Pine Beetle in the Rocky Mountain Region" by James C. Evenden was used as a guide in conducting this survey.

Type maps that were made from the 1933 survey and from the control work done in the fall of 1933 and spring of 1934 were used for this survey so the area of lodgepole pine shown on the accompanying map is fairly accurate. An attempt was made to deviate from the 1933 strip lines as far as practicable. An average cruise of three per cent was made of all the lodgepole area in each unit except in Weber River where only fair samples of the entire area were cruised. Why

The personnel consisted of the following: Owen DeSpain, chief of party, L. E. Sessions and Morris Lewis. These men had previous experience in insect control and survey work.

GENERAL SUMMARY:

Of the eight units cruised only two are alarming in the number of new attacks found on strip lines; namely, the Provo River and Duchesne units. The Provo River unit shows an estimate of 13,618 N. A.

The above figure is for the entire unit while only fifteen sections are in as serious epidemical stage as shown in Table #2. These sections show in the aggregate, a total of 13,190 N. A.

Inasmuch as the 1933 strip line through Sections, 1, 2, 11 and 12 did not hit the heavy infested area which was thoroughly cruised this year and the lines through the Spring Canyon area trend toward untreated area, the former would raise the increase more than actually is the case while the latter perhaps show more N. A. in the Spring Canyon area than are actually present.

It is obvious that a very rapid increase of new attacks is taking place throughout the unit, and unless very drastic control work is initiated immediately, the entire unit will soon be so heavily infested that control work will not be practicable. It is recommended that control work be started this fall and continued to completion next spring.

The Iron Mine Unit is very alarming in the increase of new attacks during the past year. The cruise shows an increase of 2,306 N. A. or 220 per cent over last year's estimates. This is a valuable body of timber with topographical conditions that would make control work relatively easy. If the area is left, the epidemical condition will soon spread into surrounding areas now in an endemic stage.

INDIVIDUAL SECTIONS IN EACH UNIT:

All areas considered in an epidemical stage are segregated into sections and shown in Tables 2, 3, 4 and 5. These areas are also cross hatched in red on the accompanying maps.

PROVO RIVER UNIT:

Of the fifteen sections considered in an epidemical stage in this unit, six are alarming. Section 30 shows 1,042 N. A. Most of those on the east side of the canyon are in an area that was not previously surveyed or treated although the heavy infestation was known to exist. The west side of the section is part of the area composing the Spring Canyon area but was not treated in the spring of 1934.

Section 32 is adjoining a "hot spot" that was treated last spring but very little work was done within this section.

Sections 1, 2, and 11, Township 5 South, Range 8 East, compose a very heavily infested area that was not discovered until late last spring, therefore, it was not possible to treat only part of the area due to extreme dryness. Over 900 trees were peeled

in this area by Mira and CCC labor after the fire hazard had become too high to continue treating by burning.

Section 36, Township 2 South, Range 8 East is also in the Spring Canyon area. Past control work has shown the infested trees in this area tend to occur in groups and it is possible that more than an average of these groups were hit by the cruiser.

SHINGLE CREEK - NORTH FORK UNIT:

The control work done last spring in this unit was confined to the necks of timber extending along North Fork and Shingle Creeks, the portions of Sections 25, 26 and 36, Township 2 South, Range 7 East, and Sections 1 and 2, Township 3 South, Range 7 East that are within the unit. The strip lines run in this area and general observation along the creeks and trails indicate that the control work was reasonably effective.

The areas shown in an epidemical condition are the same areas shown thus last fall with the exception of the body of lodgepole within Sections 11 and 14, where no N. A. were found in the previous survey. There is estimated to be 845 N. A. in this area at the present time. This is a very rough, rocky area, making control work nearly impossible.

In Sections 15-16 and 8-18 some control work was done but the areas were too far from the main camp for effective working so the work was discontinued before the areas were finished. It was planned to establish a small camp near these areas later but weather conditions were prohibitive. Last year's estimates were 1668 N. A., while this year only 1,083 N. A. are estimated, so perhaps the control work has some effect. These areas are segregated into sections and shown in Table #3 and cross hatched on the map.

BEAVER CREEK UNIT:

There is shown to be an increase of 210 N. A. in the entire unit over last year's estimates. This increase is caused by finding 12 N. A. in Sections 27, 34 and 35 south of the canyon road. This area was treated last spring but the survey would indicate that some trees were missed. The Yellow Pine area which was treated last spring is shown to be entirely in an endemic stage. Only four new attacks were found. Two of these, by careful investigation, showed that most of the beetles were pitched out while the other two trees were very light attacks. The N. A. found in Upper Sitting Creek were somewhat scattered. Control work was done in Section 15 last spring, while over the balance of that area

a more intense survey was made which showed an entirely endemic stage.

With the exception of the area south of the road, it is doubtful that any area in this unit is in an epidemical stage. Some control work or further investigation should be done in Sections 34 and 35.

WEBER RIVER:

A very extensive survey was made in the Smith and Morehouse and the upper drainages of the Weber River. A total of 32.2 miles of strip line was run in type in these areas and only two new attacks were found. It is obvious that this region is entirely in an endemic stage.

MIRROR LAKE UNIT:

This unit is in an endemic stage as was the case last year, with 1 N. A. per 23.1 acres. There is an increase of 182 N. A. but most of these are in the vicinity of the Hoover Lakes. It is possible that the Broadhead infestation is spreading in that direction so this area should be carefully watched.

DUCHESNE UNIT:

An increase of 2,306 N. A. is shown during the past year in this unit. This is alarming when it is considered that in 1933 a 2.1 per cent and in 1934 a 3.1 per cent cruise was made so that a fairly accurate cruise was made both years. This area supports a very heavy stand of lodgepole pine and unless control work is done immediately, the infestation will soon spread to surrounding areas now entirely in an endemic stage. The area is segregated into sections in Table No. 5.

GRANDDADDY LAKES UNIT:

Only 331 N. A. are estimated in this unit, an increase of 265 over last years estimate. Most of these were found in Marsell Canyon, an area not previously surveyed. This canyon supports only a small area of lodgepole pine, but should be closely watched for an epidemical outbreak.

UPPER ROCK CREEK UNIT:

A total of 1,071 N. A. are estimated in this area in comparison with 445 last year. Control work was planned in this unit last spring but dry weather conditions prevented burning. The area is

relatively small and control work should be done.

LOWER ROCK CREEK UNIT:

Miners Gulch

Due to effective control work in this area in the spring of 1934, this area was reduced from a very epidemic stage to one entirely endemic.

Peterson Gulch

An estimate of 800 H. A. was made for this area in 1933. About 500 trees were treated last spring reducing the number to 36 H. A. at the present time.

McAfee Basin

An increase of 450 H. A. has occurred during the past year in this area. The main body of timber was not reached in 1933 by the cruisers so, no doubt, the increase has not been as great as indicated. The area is in a mild epidemical stage and should be treated. The area is accessible from Rock Creek by trail as shown on the map.

Respectfully submitted by

Owen De Spair
Chief of Party.

Approved by

W. H. H. H. H.

Acting Forest Supervisor.

TABLE No. 1 - SHOWING RESULTS OF INSECT SURVEY BY UNITS - 1934.

Unit	Estimated average of in P. units - strip : strip : line	No. of estimated acres : of : No. of : acres : : % increase	Cruises : R. T. : per : H. V. over : R. T.
------	---	---	--

Provo River	16,000	269.4 : 48.7 : 298	13,618 : 1.2 : 2.1 : 75	4.5	261
Shingle Creek	3,680	32.4 : 41.5 : 38	1,618 : 2.4 : 1.0 : 40	2.3	90
Beaver Creek	4,480	128.4 : 35.4 : 30	1,082 : 4.2 : 2.0 : 40	3.1	74
Duchess	3,540	119.7 : 32.0 : 68	2,816 : 1.3 : 2.1 : 45	8.6	195
Winn Lake	6,400	180.7 : 26.3 : 13	458 : 14.0 : 5.5 : 12	6.3	
Granddaddy Lakes	10,800	228.1 : 47.3 : 7	331 : 32.6 : 2.1 : 9	25.3	
Upper Rock Creek	7,680	146.8 : 32.3 : 29	1,518 : 4.3 : 1.0 : 18	8.1	161
Lower Rock Creek	1,280	39.4 : 32.4 : 2	64 : 20.0 : 2.3 : 8	5.0	
(a) Miners Gulch					
(b) Peterson Gulch	640	34.7 : 18.4 : 2	36 : 18.0 : 3.4 : 0	0	
(c) McFarce Basin	640	31.4 : 20.3 : 23	466 : 1.4 : 4.9 : 9	3.5	
Heber River					
Entirely in an endemic stage.					

59/17

556+0

1.

20

30

38

85

TABLE NO. 2. Showing Infestation by Sections in the Provo River Unit.

: Township : Estimated : Acreage in : Strip : No. of N. A. : Estimated : Acres :										
: and : : L.P. Strip : Multi- : on Strip : No. E.A. : per :										
: Section : Range : : Line : plar : Line : : in Sec. : E. A. :										
4	T.2 S., R.9 E.	420	13.2	31.3	4	127.2	6.6	127.2	6.6	Not in epidemical stage
7	"	640	10.0	64.0	2	128.0	5.0	128.0	5.0	do
9	"	640	16.0	40.0	2	80.0	5.0	80.0	5.0	do
16	"	640	14.5	44.4	3	132.3	4.8	132.3	4.8	do
29	"	320	13.0	16.9	10	169.0	1.3	169.0	1.3	
30	"	320	12.0	31.6	33	1042.8	.61	1042.8	.61	
31	"	320	11.0	29.0	13	377.0	.94	377.0	.94	
32	"	640	14.0	45.7	23	1279.6	.5	1279.6	.5	
5	T.3 S., R.9 E.	640	14.0	45.7	17	776.9	.8	776.9	.8	
6	"	640	12.0	53.3	7	373.1	1.7	373.1	1.7	
1	T.3 S., R.8 E.	480	9.5	50.5	31	1,565.5	.3	1,565.5	.3	
2	"	480	9.5	50.5	23	1,414.0	.3	1,414.0	.3	
11	"	320	3.5	91.4	35	3,199.0	.1	3,199.0	.1	
25	T.2 S., R.8 E.	640	8.0	80.0	5	400.0	1.3	400.0	1.3	
26	"	640	12.0	53.3	5	266.5	2.4	266.5	2.4	
33	"	300	7.0	42.8	11	470.8	.6	470.8	.6	
34	"	640	10.0	64.0	9	576.0	1.1	576.0	1.1	
35	"	640	16.0	40.0	5	200.0	3.2	200.0	3.2	
36	"	640	8.0	80.0	14	1,120.0	.5	1,120.0	.5	

TABLE NO. 3. Showing Infestations by Sections in the Shingle Creek - North Fork Unit.

Township: Estimated: Average in: Strip : No. of : Estimated : Acres per :						
: end : Average : L. P. : Mult. : H. V. on : No. H. V. : H. V. :						
Section: Range : L. P. : Strip Line: : Strip : in Sec. : Remarks :						
15-16	T. 2 S. R. 8 E. 640	14.6	44.4	19	843.6	.7
8-18	"	22.0	20.0	12	240.0	2.6
11-14	"	19.4	16.4	7	107.8	5.9

TABLE NO. 4. Showing Infestation by Sections in the Beaver Creek Unit.

Township: Estimated: Average in: Strip : No. of : Estimated : Acres per :						
: end : Average : L. P. : Mult. : H. V. on : No. H. V. : H. V. :						
Section: Range : L. P. : Strip Line: : Strip : in Sec. : Remarks :						
10	T. 2 S. R. 7 E. 640	11.8	6.6	4	36.8	1.7
16-20	"	22.4	9.8	4	39.2	6.6
24-35	"	23.7	13.6	11	148.6	2.1
do						do
do						do
do						do

Considered in endemic stage

TABLE No. 5. Shading Information by Sections in the Duquesne Unit.

: Township: Estimated: Acreage in Strip : No. of : Estimated : Acres per:									
: and : Acreage : L. P. : Mult. : H. A. on: Ho. H. A. : H. A. :									
Section Range : L. P. : Strip Line: : Strip : in Sec. : :									
Vinta Special									
4	Horizon								Remarks
	T.2 N., R.9 W.	640	15.0	42.6	15	639.0	1.0		
5	"	320	7.0	45.7	4	182.8	1.7		
8	"	480	18.0	26.6	13	345.8	1.3		
9	"	640	15.5	47.4	10	474.0	1.4		
16	"	640	13.0	49.2	23	1,151.6	.5		
17	"	640	20.0	32.0	16	512.0	1.2		

SUMMARY OF INSECT SURVEY

Timber Type - L.P. Insect - D. monticolae Wasatch National Forest

Dates of Cruise - Sept. 7 to 17, incl., 1934.

JAY B. HANN, Forest Ranger

Unit No.	Name	% of : Cruise :	No. trees : treated :	No. : new : attacks :	% of : new : attacks :	Character of in- : festation :
			Spring			
			Fall year			
1	Smith Fork	1 1/2 to 10	S-1932 66 F- 32 2133 S- 33 50 S- 34 292	1140	3.8	Light, mostly Murray- anae
2	Horse Creek	1 1/2	S- 32 24675 F- 32 526 S- 33 791	1240	1.0	Mostly light attacks No treating 1934
3	Blacksfork	1 1/2 to 10	S- 31 1989 F- 31 450 S- 32 2877 F- 32 4674 S- 33 308 S- 34 130	4820	37.0	Several groups very heavy hits; balance of unit light attacks
4	West Fork	1 1/2	F- 32 1406 S- 34 56	1920	34.3	Several heavy hits
5	Dry West Fork	1 1/2	F- 32 418 S- 34 196	240	1.2	Medium to light
		Acres to		Cost of Treating		
		Acres treated	be treated	Tot.Est.:	Per A.	Per Tree
1	Smith Fork	S- 32 1280 F- 32 7976 S- 33 300 S- 34 600	None except some overlapping from Blacksfork		Considered with unit No. 3	
2	Horse Creek	S- 32 7040 F- 32 820 S- 33 2850	None	None		
3	Blacksfork	S- 31 1920 F- 31 1280 S- 32 5120 F- 32 12860 S- 33 3000 S- 34 1000	4,000	\$2,000	.50	\$1.00 It is not contemplated to treat over 2000 trees in unit
4	West Fork	F- 32 6258 S- 34 1100	500	250	.50	1.00
5	Dry West Fork	F- 32 1022 S- 34 700	None	None		

SUMMARY OF FIELD WORK - Insect Survey

Acreages of each unit covered by survey

West Fork of Smiths Fork - Unit No. 1	25,600 A.
Horse Creek - Unit No. 2	9,600 A.
Blacksfork - Unit No. 3	38,400 A.
West Fork - Unit No. 4	20,480 A.
Dry West Fork - Unit No. 5	6,400 A.

Unit: No.	: Total	:No. strip	: Total	: Total strip	:Total estimate new
No. :miles	:new at-	:acres in	:strip A.	: acres per	:attacks per acre
:of strip	:tacks found:	: type	: covered	: new attack	: (average)
1	26.8	13	95.0	214.4 213.0	16.4 .06
2	17.0	15	57.2	136 137.0	9.1 .11
X 3	60.6	59	283.4	488.0 488.4	8.3 .12
X 4	33.4	22	214.8	267.2 291.2	12.2 .82
5	11.2	3	46.5	89.6 86.7	28.9 .01

NARRATIVE SECTION

Description of the Survey:

The method followed in making this survey was that as outlined in "Method of Conducting Extensive Surveys of Mountain Pine Beetle Infestations in the Northern Rocky Mountain Region". Since we do not have satisfactory type maps the strips were run thru the center of each section irregardless of type encountered. The percentage of "bug" type encountered is shown in the tabulation above. As near as possible the strips were run across drainages.

The personnel consisted of as follows: Marvin S. Jeppesen, chief of party; T. Douglas Wadsworth and Cecil Jonely members of the party. These men all came on to the job with previous experience along this line. Directly prior to the inauguration of the work these men were members of the timber survey crew working in the same drainages so consequently there was no lost time or lost effort in breaking in the crew.

The work was started September 7, 1934 and on September 17, 1934 was completed, the crew moving to the Ashley N. F. on September 18, 1934.

The cost of the job was \$203.00, omitting any contributed time and costs.

Smith Fork - Unit No. 1

As in the last two insect surveys this unit showed quite a number of new attacks but is well within the limits of an endemic stage as shown by the average number of new attacks per acre. The attacks were mostly light and there were no evident hot spots. Part of this unit was covered by the timber survey workers in the course of their cruising.

Horse Creek - Unit No. 2

While the average number of attacks per acre is within the arbitrary limits set up for an epidemic condition it is not believed any work at control measures will be necessary. Only in areas where the mature timber is scattering were more than one or two trees found in a place. While some of the new attacks were vigorous natural predators are pretty well in evidence within this unit and since we had such a sharp drop in the epidemic condition of several years ago it is felt that at least we should not go into this unit on control work this year at least.

Blacksfork - Unit No. 3

This is a rough broken drainage and is the unit that has seen the most insect control jobs of any place on this district. In spite of this we still find some hot spots that show an alarming condition, large trees heavily attacked and in groups ranging from 5 or 6 to 10 and 15 new attacks at a place. Such of this unit as is shown on the map attached is recommended for treatment. If we should have a favorable fall work should be initiated right away as soon as conditions of work are favorable. It is favored to fall and pile and burn all trees treated for the reasons of about equal cost and the fact that the timber is rather tall and large. The largest number of new attacks found were mostly above where any control work was done on previous jobs.

West Fork - Unit No. 4

Most of this unit showed clearly endemic conditions but since we will be in this region with a control crew it is advised to treat a small corner where some patches of mature timber were missed on former jobs. This is a rather rolling terrain with islands of mature timber within large areas of immature timber so that a control crew must hot spot of a necessity.

Dry West Fork - Unit No. 5

This unit showed a normal endemic condition and no work is deemed necessary at this time.

Certain areas on this district seem to have a susceptibility for the *Dendroctonus monticolae*. It is felt that the areas within Unit No. 3 come under this classification. Therefore, the control work if inaugurated should be under the best possible conditions and done in the most careful manner. If the fall conditions do not come up to a good standard, i.e., enough early moisture so that control work may start by early October at least we should plan to do the work in the spring since fall work has proven to be unsatisfactory where it is too cold.

(Sgd.) JAY B. HANN,
Forest Ranger

S
Insect Control
Wasatch

May 29, 1934.

REPORT ON INSECT CONTROL PROJECT - ROCK CREEK

- - - -

The camp was established on the 15th of April at the mouth of Miners Gulch. The organization of the crew was as follows:

Byron S. Collett, acting camp manager and crew foreman
Albert Peterson, crew foreman

The crews consisted of six men on the line and a packer. A cook and a flunky completed the organization of eighteen men.

Treating operations began on the 17th in Miners Gulch and continued in the area until the 21st of April. The crews then picked up a few spots of timber on the benches below Miners Gulch which were also infested.

On the 22nd of April I reported in camp and took up the duties of camp manager. During the 23rd and 24th the crews finished the areas below Miners Gulch and picked up several scattered areas between the main bodies of timber.

On the 25th Collett's crew moved into Peterson Gulch and started stripping the lodgepole in the main canyon. Peterson remained in and around Miners Gulch picking up the tag ends and covering the area thoroughly to check on fires.

On the 26th both crews were working in Peterson Gulch. Due to the topography it was impossible to bring pack horses into Peterson Gulch from the mouth so it became necessary for a slightly different organization of the crews.

One packer took over the full string of six horses and packing five and riding one brought the oil the first trip from lower Stillwater up the Dry Ridge trail and then brought the oil in from the head of Peterson Gulch. Due to the long trip around and the fact that the oil had to come in from the head it was found to be more feasible to bring the oil directly from camp up the Miners Gulch trail and then down the ridge to the crews. This method was then used for the duration of the work.

Albert Peterson and his crew struck a hot spot at the beginning of the strip and remained on this area "hot spotting" until and including

part of May 3. Byron Collett and his crew also picked up several hot spots on his strips, but as most of these were small they were treated in the regular run of the strips.

On May 4 the two crews stripped out this portion of the canyon and cleaned up the worst area in Peterson Gulch.

Orders were received on the 6th to move camp and on the 7th camp was moved to the Provo River camp at Shady Dell.

During the project several scouting trips were made. In Corral Creek several small scattered groups of lodgepole were investigated and found to be clean, but in the main body of lodgepole near the head of the creek six scattered trees were found, two of which were treated by peeling as they were only butt attacks. On the return to camp I looked into middle basin and found it also clean.

A trip was also made up Rock Creek to Fall Creek. Few bugs were found on the area above Fall Creek with more indications of infestation in and below East Fork. None of this area seemed to be more than slightly epidemic.

A trip on the northeast side of Rock Creek above camp located enough bugs in scattered groups of lodgepole for a crew to work one day in cleaning them up. Most of these attacks were light and in weakened trees.

During the fall survey the area covered last year should again be checked for increase and in addition the area between Hell Hole and Corral Creek, the head of Corral Creek and McAfee Basin should be checked. The head of Corral Creek, due to the large body of mature lodgepole and the presence of several bug trees, has every possibility of developing into a serious epidemic condition if not closely watched. The divide between Corral Creek and Hell Hole, while not personally investigated, has a large body of lodgepole which appears clean of redtops from a distance.

However, as there is a possibility of recent infestation this area should also be checked upon. McAfee Basin should also be checked as it is an area of like circumstances.

Dry Canyon, with a large body of lodgepole adjacent to that of Peterson Gulch, also has a few indications of bugs and should be more thoroughly covered in the fall survey.

By covering these outlying areas and catching the infestation in only slightly epidemic stages it should be possible to keep a widespread heavy infestation, as has been encountered in several areas, from developing.

RECORD OF TREATING

Miners Gulch

<u>Crew Man days</u>	<u>No. Trees Treated</u>		<u>Oil</u>	<u>Horse Days</u>
	<u>F.</u>	<u>S.</u>	<u>Gals.</u>	
16	10	15	20	6
16	16	23	45	6
16	9	17	25	6
12	10	17	15	6
8	4	5	15	3
<u>68</u>	<u>49</u>	<u>67</u>	<u>120</u>	<u>27</u>

Bench Below Miners Gulch

4	5	-	3	-
8	24	-	10	3
17	20	12	20	4
7-1/4	9	-	5	2
7	8	-	4-1/2	3
<u>43-1/4</u>	<u>66</u>	<u>12</u>	<u>42-1/2</u>	<u>12</u>

Petersons Gulch

8	9	1	-	-
8	9	2	-	-
16	45	2	-	-
16	40	7	5	6
16	20	18	25	6
16	21	39	65	4
15	27	32	50	6
16	14	23	29	6
15	11	11	14	6
<u>126</u>	<u>196</u>	<u>135</u>	<u>189</u>	<u>34</u>

Meals served - 953

Subsistence and supplies \$325.22
Cook and flunky wages 130.80
Total \$454.02

Subsistence and supplies to Prove 100.00
(approx.)
\$354.02

\$354.02 ÷ 953 = \$0.37 cost per meal

A. D. Gillard
Junior Forester.

8
Insect Control - Wasatch
Fall Survey 1933

Salt Lake City, Utah
November 8, 1933

INSECT SURVEY REPORT - FALL OF 1933

Following is the annual report on Insect Infestation on the Wasatch National Forest.

SALT LAKE & AMERICAN FORK DISTRICTS:

There are no insect infestations of any importance on either of these Districts. Ranger West makes the following statement relative to Spruce Bud Worm:

"For three or four years previous to last year there were three small areas of Fir infested with a defoliator. These have evidently run their course as there is no evidence this season of their having done any damage."

KANAB DISTRICT:

Please refer to our memorandum of October 9, and the copy of a report and map covering the survey of this district, which was attached thereto, and which should be considered a part of this report.

Since the above report referred to discusses the pertinent parts of the insect infestation on this district, only brief comment is being made here.

The species of timber involved is Lodgepole Pine and the insect responsible is Mountain Pine Beetle, (*Dendroctonus Monticolae*).

As indicated in the attached form, "Summary of Insect Survey" we recommend that control measures be initiated on the following control units during the spring of 1934:

<u>Unit No.</u>	<u>Unit</u>
2	Beaver Creek
3	Shingle Creek
4	Provo River

or less confused with the species murrayanae due to similarity of characteristic working of the two species. As indicated on the attached survey form, further control measures are recommended for the units Nos. 1, 3, and 4.

Map showing location of projects with division into control units is attached, and the areas recommended to be treated during the spring of 1934 are shown in orange color.

Due to the amount of work to be done, it will not be practical to complete the job with contributed time. Therefore, funds for the hire of two crews will be needed.

Sufficient equipment is on hand to handle this control job.

It is estimated \$2,100 will be needed for this district.

GRANDDADDY LAKES DISTRICT:

Please refer to form "Survey of Insect Survey" attached.

The mature lodgepole stands of this district were systematically surveyed this fall for the first time, by an organized survey crew. This work was done by Owen Despain as chief of party, with D.I. Rasmussen, and Morris Lewis as cruisers.

As will be noted from the attached survey form, the infestation on only two of the control units of the district are at all alarming. These are the Lower Rock Creek and Duchesne units Nos 1 and 7.

The survey of the Mirror Lake unit No. 6 indicates a slight increase in the number of new attacks over the red top counted. However, Despain has the following to say in his report relative to this unit.

"Mirror Lake unit is entirely in an endemic stage with 276 N.A. or 1 N.A. per 23.1 acres."

On the upper Rock unit No. 4, it is estimated there are 445 new attacks, and while in the main they are light, and the indications are that they are on the decline, yet on account of the infestation being to a large extent concentrated on a relatively small area, we recommend that approximately 640 acres on the unit be treated during the spring of 1934, in addition to the Peterson Gulch area in the lower Rock Creek unit, and the Iron Mine area in the Duchesne unit.

We had hoped to get at least part of the control work done on these units this fall, but since the season was so dry it would have been impractical to attempt this work on account of fire danger, even if funds had been made available.

Sufficient equipment is on hand to conduct this control job.

Estimated funds needed..... \$12,000

BLACKSFORK DISTRICT:

Please refer to the form "Survey of Insect Survey" attached.

Junior Forester Balch, temporary employees Ivan Lewis and Charles Baden completed the survey work on this district under the direction of Ranger Hann. Due to the pressing other work on the district, a written report has not been submitted to this office. However, the matter has been discussed with both Rangers Hann and Balch, and on the basis of this, together with a general knowledge of the problem on the ground, the following comment is made:

While the estimated new attacks on the Smithsfork unit as shown on the survey form is 1750 trees, we are confident that not more than 500 trees on the unit will be in need of treating. A large majority of the attacks are very light and confined to one side, about three feet up from the base of the tree. On the Standard Timber Company Sale area all attacks were confined to girdled trees. While no positive identification has been made, we are confident that many of the attacks are *Dendroctonus murrayanae*. Therefore, we estimate that only approximately 1500 acres will need to be covered in order to accomplish the control work justified on this unit, and that not more than 500 trees will be found infested.

The only other units where further control measures are considered necessary are on the Blacksfork and West Fork numbers 3 and 4. Generally the attacks in these units are light and, therefore, control measures by more or less "hot spotting" methods on consecrated areas is all that is considered necessary. The location of these areas is shown on the attached copy of the survey map.

Mountain Pine Beetle (*Dendroctonus monticolae*) in Lodge-pole pine timber is the insect responsible. However, in making the survey of the attacks for which this species of *Dendroctonus* is responsible, it is probable that the identification was more

Map showing location of projects with divisions into units, is attached.

The insect control work on this district should be done with crews under the supervision of the ranger, and members of this office.

Sufficient insect control equipment can be organized on the forest to complete the job on this district, if funds are allotted.

Summary of Insect control funds needed to complete Insect control work on forest:

Kamas District	\$12,000
Blacksfork District	2,100
Granddaddy Lakes District	<u>2,600</u>
Total	16,700

BB/SS

A. G. Nord, Forest Supervisor

SUMMARY OF INSECT SURVEY

Timber type: Lodgepole Pine Insect causing damage: D. Monticolae.

Kamas District, Wasatch National Forest

Sept. 12 to Sept. 28

Dates of cruise

Forest Supervisor

(1) Unit No.	Name	(2) % of cruise	(3) No. trees treated Spring 1933 Fall (Year)	(4) No. new attacks	(5) % of new attacks	(6) Character of infest- ation	(7) Acres treated Spring 1933 Fall (year)	(8) Acres to be treated Spring 1934 Fall (Year)	(9) Estimated cost of treating Total Per A	Per tree	
1	Hoyts Canyon	No infestation									
2	Beaver Creek	1.9	-	832	155	Moderate	None	2000	1600	.80 1.923	
3	Shingle Creek North Fork	2.4	-	1563	170	Heavy	None	1600	1400	.875 .895	
4	Provo River	2.1	3113	8216	234	Heavy	3630	12000	9000	.75 1.095	
5	Pullen Creek	No infestation.	See - S-Insect Control Survey Fall, 1933								
6	Smith-Moorehouse	No infestation.	See S-Insect Control Survey Fall, 1933, Memo of October 9, 1933 By: Owen Despain.								
7	Gardners Fork	Do									
8	Weber Unit	Do									

10.616

SUMMARY OF INSECT SURVEY

Timber type: Lodgepole Pine Insect causing damage: D. monticolae

Blacksfork District, Wasatch N.F.

August 20, to September 20 (Intermittent)

Dates of cruise

Forest Supervisor

(1) ; Unit ; No. ;	(2) ; Name ; %	(3) No. trees ; treated ; Spring 1933 ; Fall 1932 ;	(4) ; No. ; New ; attacks ;	(5) % of ; new ; attacks ;	(6) ; Character ; of infest- ; ation ;	(7) Acres ; treated ; Spring 1933 ; Fall 1932 ;	(8) Acres to ; be treated ; Spring 1934 ;	(9) Estimated ; Cost of treating ; Total ; Per ; Per
1	Smithsfork	1½ - 10 F. 2133 S. 50	1750	.80	Very light	F. 7976 S. 300	1500	900. .60 1.80
2	Horse Creek	2½ - 10 F. 526 S. 791	280	.21	Very light	F. 821 S. 2850	None	- - -
3	Blacksfork	1½ - 5 F. 4674 S. 308	660	.013	Light	F. 12860 S. 5000	1500	700. .466 1.06
4	West Fork	1½ - 2½ F. 1406	670	.40	L to M.	F. 6258	1000	500. .50 .88
5	Dry West Fork	1½ F. 418	80	.191	Light	F. 1022	None	- - -
6	Muddy Creek	1½ None	160	-	-	-	-	- - -

* It is evident that the estimated number of new attacks on Unit No. 1 is far in excess of the number that would actually be found when control measures are completed. A good percentage of the attacks are very light, one-sided attacks, ranging from two to four feet up from the base of the tree. All new attacks found in the Standard Timber Company sale area where in girdled trees. It is our opinion that Dendroctonus murrayanae is responsible for many of the attacks. Therefore, it is believed that not more than 500 will need treating, and our estimate is based on this number.

SUMMARY OF INSECT SURVEY

Timber type: Lodgepole Pine Insect causing damage: D. Monticolae Granddaddy Lakes District, Wasatch N.F.

Sept. 29, to October 14

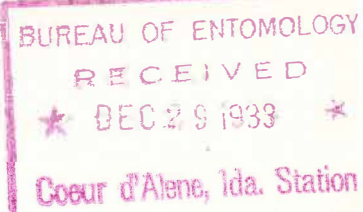
Dates of cruise

Forest Supervisor

(1) Unit No:	Name	(2) % of cruise	(3) No. trees ; treated ; Spring 1933; ; Fall 1932	(4) No. New attacks	(5) % of ; new ; attacks	(6) Character ; of infest- ; ation	(7) acres ; treated ; Fall 1932	(8) Acres to ; be treated ; Spring 1934	(9) Estimated ; cost of treating ; Total ; Per ; A	Per ; tree	
1	Lower Rock Creek	2 - 5		1059	*230	Heavy	None	1920	1200.	.62	1.13
2	Squaw Basin		None								
3	Upper Rock Creek	2.4	-	445	*78	Light	None	640	400.	.62	.90
4	Granddaddy Lakes	3	None	66	*34	Light	None	None	-	-	-
5	South Fork		None								
6	Farm Creek		None								
7	Duchesne	2	None	510	*110	Heavy	None	2000	1000.	.50	1.96
8	Mirror Lake	1.4	None	276	*130	Light	None	None	-	-	-

*Based on count of red tops

2356



S
Insect Control
Wasatch

Salt Lake City, Utah.
December 20, 1933.

REPORT ON INSECT CONTROL WORK COMPLETED ON THE WASATCH NATIONAL
FOREST DURING THE FALL OF 1933.

Reference is made to our S-Insect - Spring of 1933, report
of November 10, 1933, and Insect Survey, Fall of 1933, report of
November 8, and to attached copy of report submitted by Mr. DeSpain,
Project Manager.

KAMAS DISTRICT

PROVO RIVER UNIT NO. 4.

With the full expectation of being allotted funds for employ-
ment of men under the Civil Works Program, late in November the
Regional Office allotted the Forest \$4,000.00 Insect Control
Funds in order to get insect control work going, which it was intended
would be transferred to Civil Works as soon as funds were authorized.
Accordingly, on November 27, five crews began control work on the
Spring Canyon area of this unit. Camp was established at Shady Dell
on Provo River.

On December 6, we received definite information that no
Civil Works would be allotted to the Forest. Therefore, due to the
climatic conditions which prevail this time of year, and to the
consequent high cost, and hazard to the success of the control job,
on December 7, the work was brought to a close.

If funds are made available, the control work as discussed
in previous reports will be initiated during the spring of 1934.

From the attached form and map, please correct your control
map and Form R-4 FM I.C.-1 which was mailed to your office with our
report of November 8.

The attached map and Form should be returned for our files.

BB-26

A. G. NORD, Forest Supervisor.

Encs.

Copy for information Mr. Entomologist

(Copy)

INSECT CONTROL REPORT. WASATCH N. P.

Report of Fall Insect Control Work, P r o v o R i v e r.

1933

Actual burning was commenced Nov. 27, 1933 and continued until Dec. 4, 1933, a total of six days.

The work was confined to the Spring Canyon area of the Provo River Unit. The area covered is shown on the accompanying progress map. The area treated consists of 1728 acres. The camp consisted of 48 men which were divided into five burning crews of eight men each.

The attacks were relatively heavy as regards individual trees but averaged only ten feet in height. The timber is a mature merchantable type.

The topography of the area is very rough making very difficult packing and slowing up the progress of the crews.

The major part of the treating consisted of falling and skidding into decks and then burning. Weather conditions were unfavorable for full efficiency in treating due to the frozen condition of the trees, snow and cold weather. On this area the oil has to be transported by pack horses from the canyon road to the area treated a distance of from one to four miles.

The project was discontinued Dec. 4 for the reason that it was decided that the work would be carried on more advantageously in the spring. The work was discontinued before the crews reached their peak of efficiency.

The area treated 1728 acres showed an average of three ^{tenth} trees per acre or an exact total of 560 trees. This is considerably lower than the survey estimate 1933, for this area. This is accounted for by the fact that the infested trees are somewhat grouped and the strip lines run in this area happened to hit more than the average of these groups.

Subsistence left at the end of the project is as follows, credit at John B. Hoyts, Kamas, Utah, on returned perishable goods \$20.30, supplies on hand \$100.00 which is stored at Kamas and Soapstone Ranger Station.

Oil left in the field is as follows, nine barrels of oil at the junction of Spring Canyon trail and the Canyon road.

Respectfully submitted,

(Signed) OWEN DeSPAIN, Project Manager.

COSTS INSECT CONTROL PROJECT - WASATCH NATIONAL FOREST.

Inclusive dates work carried on: Nov. 27 to Dec. 7, 1933.

This report made: December 20, 1933.

A. G. NORB, Forest Supervisor.

Insect responsible: *Dendroctonus monticolae*.

	Contributed time and expense	Project funds	Total Cost
Salaries and wages	113.00	1,467.69	1,580.69
Expenses Forest Officers			
Subsistence		435.85	435.85
Equipment - purchase, re- pair, freight, etc.	-	70.49	70.49
Oil		Cost previously reported -	
Hauling, including Government trucks		27.60	27.60
Horse hire		63.00	63.00
Horse feed		Previously reported.	
Miscellaneous		5.07	5.07
Total cost of project:	113.00	2,069.70	2,182.70

No. man days contributed: 14

No. man days paid from project funds: 249

Total man days used: 263

MS R4X

(COPY)

Salt Lake City, Utah
October 9, 1933.

S
Insect Control
Wasatch
Survey Fall 1933
NIRA

MEMORANDUM TO REGIONAL FORESTER:

Reference is made to your memorandum of September 27.

The insect survey for the Kamas and Blacksfork Districts has been completed, and while the written report for the Blacksfork District has not yet been received, we have sufficient information from a field investigation to justify recommendation for this district without delay. The survey crew is now at work on the Stockmore District and should have the survey pretty well completed by now.

KAMAS DISTRICT:

Attached hereto, is a copy of a report and map covering the survey of this district, which was prepared by Owen DeSpain, chief of party.

From the report, it will be noted that we have a rising epidemic on this district in the lodgepole pine stands. It is to be regretted that the survey during the fall of 1932, by former Ranger Davis, was not extensive enough to give us a clear picture of the infestation on this district. As you know, control work was done along the Provo River and the Spring Canyon area last spring, largely with E.C.W. help, under the direction of Mr. Davis. Due to the inexperience of men and to the failure of the camp manager to properly supervise the work, a rather poor job of treating was done. We have practically as many new attacks this fall on the area as were treated last spring. However, when members of this office discovered the problem on this district, which was late in June, we rushed two experienced control crews from the Blacksfork District, and organized two more from Kamas, in an attempt to finish the job before the flight of the beetles and the fire danger became too great.

It is very conclusive that the infestation on this district emerged from the endemic to the epidemic stage in 1931. It was the estimate of the four crew foremen last spring that the rate of spread in the Spring



E.C.W.

Canyon area would average 10 trees in the new attack to the one tree abandoned. Many examinations made of galleries by Forest officers, showed as many as 30 to 35 larva.

Mr. DeSpain's report of the fall survey shows that the infestation is in a very aggressive condition and will range as high as five trees in the new attacks to each tree in the old attack.

The infestation on this district is scattered over a wide area which is very rugged, rough, and inaccessible. Therefore, the cost of control will be relatively high.

It is our desire to begin work just as soon as funds can be made available, as this infestation is a serious menace to the Uinta lodgepole stands, and it is almost mandatory that as much as possible be done this fall.

It is estimated that \$12,000 under NIRA wages and hours will be necessary to complete the control work for this district.

BLACKFORK DISTRICT:

We are very much gratified with the success of our control efforts in the past on the Blackfork District. The survey shows very few new attacks on the areas formerly treated, and these are mainly very weak attacks. However, a few isolated patches of lodgepole stands, which were not reached in former operations, show enough trees to further clean up, and it is, therefore, our desire to do some additional work on this district if funds are available. This could well be deferred until the spring of 1934, as we will have our hands full with our other work this fall.

It is estimated \$1,000 will be needed to complete the necessary work on this district.

STOCKMORE DISTRICT:

While the survey on this district has not been completed, we are quite sure that some control work will be needed on this district in vicinity of Lower Rock Creek and the central part of Duchesne. It is estimated \$2,000 will be needed for this district.

Sufficient equipment for our needs, except possibly Kimmel stoves and cook outfits, is already on hand.

Total allotment needed for Forest \$15,000

A. G. NORD, Forest Supervisor

By (Sgd.) BLAINE BETENSON, Acting

(COPY)

Salt Lake City, Utah
October 9, 1933.

8
Insect Control
Weber River
Wasatch

WEBER RIVER INSECT SURVEY - FALL 1933.

Memorandum to Ranger Parke:

Following is a brief summary of the findings of the insect survey conducted in the Weber, Gardner - Middle Fork and Smith and Morehouse units on the Weber River.

There were no new attacks found in the whole drainage. An attempt was made, after the first day, to only run samples in the areas that showed large areas of lodgepole. A fair sample was taken of both high and low ranges so if any new infestations were present they would have shown on sample strips.

The strip lines run are shown on the accompanying map with dates and names of cruisers.

The large number of old infestations found in all the units was interesting. The most concentrated area was found in Dry Fork. This area covers about six or eight sections with some areas containing as many as 50 to 75% of the trees being old bug kills. It is estimated this heavy infestation took place 15 to 20 years ago.

The only large areas of lodgepole found were in Dry Fork, west side of ridge between Gardner's Fork and Middle Fork, and along ridge east of Box Canyon. No attempt is made to show the extent of the lodgepole type as the cruise was not sufficient to cover all the area.

(Sgd.) OWEN DESPAIN
Chief of Party

(COPY)

PROVO RIVER INSECT SURVEY - FALL 1933

INTRODUCTION:

An attempt is made to show briefly the findings of the insect survey conducted on the Provo River drainage. The lack of type maps and not being acquainted with the country made it somewhat difficult to always run sample strips through areas that were typical of the surrounding country. Acknowledgement is also made of the inaccuracy of the accompanying map showing area of lodgepole pine. When a cruise averaging only 1.95 per cent was made, and only of the area known to contain lodgepole type the fallacy of attempting to draw a type map can be appreciated. In as much as some of the area shown as lodgepole type is composed of other species and there are many isolated areas of lodgepole not shown it is believed, that for the purpose of this survey, the area shown will give a fair estimate of the extent of lodgepole pine type in each unit.

METHODS USED IN SURVEY:

"Methods of Conducting Extensive Surveys of Mountain Pine Beetle Infestations in the Northern Rocky Mountain Region" by James C. Evenden, was used as a guide in conducting this survey. Due to being unacquainted with the topography and type areas it was not always possible for the cruisers to adhere to strip lines plotted in advance so that in many cases deviations were made depending upon the judgment of the cruiser. Some of the strip lines seem relatively short but when the distance from the main road is considered they show a fair day's work.

GENERAL SUMMARY:

Of the four units comprising the Provo River area only one is alarming in new attacks found on strip lines. The Provo River unit shows an estimate of 8,216 new attacks or one new attack per 1.9 acres. The Shingle Creek units have areas considered in an epidemic stage but the entire units are not alarming. The Shingle Creek-North Fork unit shows an estimate of 702 new attacks or one new attack per 5.5 acres. Estimates show 832 new attacks in the Beaver Creek unit or one new attack per 5.3 acres.

Mirror Lake unit is entirely in an endemic stage with 276 new attacks or one new attack per 23.1 acres.

It is interesting that 215 new attacks were found on strip lines and only 98 red tops. This represents an increase of 219 per cent.

INDIVIDUAL SECTIONS IN EACH UNIT:

In order to show the concentrated areas of new attacks in each unit the sections showing 160 new attacks or more are segregated and shown in the accompanying table. These sections are also cross hatched in red on the map.

PROVO RIVER UNIT:

In the Provo River unit 18 sections are considered epidemic. Two of these are alarming. Sec. 31, T. 2 S., R. 9 E. shows 1919 new attacks which is probably high. Sec. 36 in Spring Canyon also is alarming showing 1920 new attacks. The other sections vary from 160 new attacks to 720 new attacks with an average of 254.7 new attacks per sections.

It is suggested that a more intensive survey be made, probably by a scout from the burning camp, of Sec. 8, 9, 20, 29, T. 2 S., R. 9 E. and 29 T. 3N., R. 8 W. U.S.M. all in the vicinity of Broadhead Meadows. This suggestion is made on the bases of red tops found, nearness to epidemic areas and the finding of four new attacks near trail in last section mentioned above.

The Broadhead Meadows area is accessible by pack horses as is the area further south, i.e. Secs. 31, 32, 5, 7, and 8 by trail going up near infested area in Sec. 31. The area south and east of the Soapstone R.S. will probably have to be reached from the road or top of ridge to the south.

SHINGLE CREEK-NORTH FORK UNIT:

Only two sections are considered epidemic in this unit. Sec. 16 shows 1200 new attacks and Sec. 18, 368 new attacks. It is highly probable that this infestation extends into Sec. 17 and 21. There were also a number of new attacks noticed along North Fork Creek from road to Sec. 15.

Sec. 18 is accessible by road from Shingle Creek while it is suggested Sec. 16 be reached, for control purposes, by following up ridge between Boulder and North Fork Creeks.

BEAVER CREEK UNIT:

Only three areas are considered epidemic in this unit. Sec. 10, which is in a cut-over area, shows 180 new attacks. This area is accessible by trail from Uppersetting or Yellow Pine Creeks. Sec. 16 has only a small

area along Yellow Pine Creek, estimated as containing 206 new attacks. This area is easily accessible. Sec. 34 and 35 are considered together as only a small isolated stance is found including 170 new attacks also readily accessible from main road.

Submitted by

(Sgd.) OWEN DESPAIN, Chief of Party
9/24/33

Approved: (Sgd.) MORGAN PARKE
Forest Ranger,
9/28/33

(Sgd.) BLAINE BETENSON
10/3/33

PROVO RIVER INSECT SURVEY - FALL 1933

Table Showing Results by Units

Unit	:Est.Acre-:	Acreage in:	Strip	:No.of N.A.:	Estimated:	Acres	:	%	:No.R.T. on:	Acres	:	% Increase
	:age L.P. :	L.P. Strip:	Multiplier:	on Strip	:No. N.A. :	Per N.A.:	Cruise:	Strip Line:	Per R.T.:	N.A. over R.T.		
	:	:	:	:	:	:	:	:	:	:	:	:
Provo River :	16,000 :	346.4 :	46.16 :	178 :	8,216 :	1.9 :	2.1 :	76 :	4.5 :	234		
Shingle Cr.-:	:	:	:	:	:	:	:	:	:	:	:	:
North Fork:	3,880 :	93.9 :	41.32 :	17 :	702 :	5.5 :	2.4 :	10 :	9.3 :	170		
	:	:	:	:	:	:	:	:	:	:	:	:
Beaver Creek:	4,480 :	86.2 :	51.97 :	16 :	832 :	5.3 :	1.9 :	9 :	9.5 :	155		
	:	:	:	:	:	:	:	:	:	:	:	:
Mirror Lake :	6,400 :	92.7 :	69.04 :	4 :	276 :	23.1 :	1.4 :	3 :	30.0 :	130		

Table Showing Sections in Each Unit Considered in Epidemic Stage

Unit: Provo River										
Section	:Township & : Estimated :Acreage in L.P.: Strip	:No. of N.A.:Estimated : Acres								
	: Range :Acreage L.P. :Strip Line	:Multiplier: on Strip	:N.A. in Sec.:Per N. A.							
16	:T.2 S.,R. 9 E:	640 :	21.0 :	30.5 :	7 :	213.5 :	3			
17	: " :	640 :	18.3 :	34.9 :	8 :	279.2 :	2.3			
31	: " :	320 :	7.0 :	45.7 :	42 :	1919.4 :	.16			
32	: " :	640 :	8.0 :	80.0 :	2 :	160.0 :	4.0			
5	:T.3 S.,R.9 E.:	640 :	8.0 :	80.0 :	2 :	160.0 :	4.0			
8	: " :	320 :	8.0 :	40.0 :	3 :	120.0 :	2.6			
7	: " :	320 :	8.0 :	40.0 :	2 :	80.0 :	4.0			
25	:T.2S.,R. 8 E.:	640 :	8.0 :	80.0 :	2 :	160.0 :	4.0			
27	: " :	320 :	5.0 :	64.0 :	6 :	384.0 :	.8			
34	: " :	640 :	9.0 :	71.1 :	3 :	355.5 :	1.8			
35	: " :	640 :	8.0 :	80.0 :	7 :	560.0 :	1.1			
36	: " :	640 :	8.0 :	80.0 :	24 :	1920.0 :	.4			
9	:T.3S.,R. 8 E. :	640 :	8.0 :	80.0 :	2 :	160.0 :	4.0			
10	: " :	640 :	8.0 :	80.0 :	9 :	720.0 :	.9			
11	: " :	320 :	9.0 :	37.1 :	3 :	111.3 :	5.7			

Unit: Provo River (Contd.)

Table Showing Sections in Each Unit Considered in Epidemic Stage (Contd.)

Section	: Township and : Range	: Estimated : Acreage L.P.:	: Acreage in L.P.: : Strip Line	: Strip : Multiplier:	: No. of N.A.: : on Strip	: Estimated : N.A. in Sec.:	: Acres : Per N. A.
12	: T. 38, R. 8 E.	: 320	: 9.0	: 37.1	: 2	: 74.2	: 4.3
6	: "	: 320	: 7.0	: 35.0	: 9	: 315.0	: 1.1
1	: T. 3 S., R. 7 E.	: 160	: 7.0	: 22.8	: 18	: 324.0	: .5

Unit: Shingle Creek-North Fork

18	: T. 2 S., R. 8 E.	: 640	: 8.0	: 80.0	: 15	: 1200	: .53
18	: "	: 640	: 8.7	: 73.56	: 5	: 368	: 1.70

Unit: Beaver Creek

10	: T. 2 S., R. 7 E.	: 640	: 8.0	: 80.0	: 2	: 160	: 4.0
16	: "	: 60	: 8.6	: 51.6	: 4	: 206	: .29
34, 35	: "	: 320	: 7.5	: 42.6	: 4	: 170	: 1.8

3
Insect Control
Wasatch

Salt Lake City, Utah.
November 10, 1933.

REPORT ON INSECT CONTROL WORK COMPLETED ON THE WASATCH NATIONAL
FOREST DURING THE SPRING OF 1933.

Reference is made to our 8-Insect Control, Survey Fall
1933, report of November 8, and related correspondence men-
tioned therein.

KAMAS DISTRICT:

Provo River Unit No. 4.

Based on an insect survey cruise which was done by
Former Ranger Robert Davis during the late fall of 1932, in
the Spring Canyon area of this unit, the result of which 3040
trees were estimated to be infested with Mountain Pine Beetle,
Control work was initiated on this unit on June 11, under the
direction of Mr. Davis, with men from the Soapstone C. C.
Camp F-6.

It was assumed the infestation was confined to an area
in Spring Canyon and along Provo River, and on the basis of the
estimated new attacks and the area to be covered, the organiza-
tion of men and equipment was planned. However, along about
June 20, members of this office discovered that the organiza-
tion of C.C.C. help could not possibly treat the area in need of
treating before the close of the control season. It was also
discovered that the infestation extended beyond the boundaries
of the area reported in need of treating. Therefore, in order
to rush the control work in an effort to treat every tree possi-
ble before the flight of the beetles, and before fire hazards
prevented, we rushed two crews fully equipped from the Blacks-
fork District and organized two more from the vicinity of
Kamas and put them to work immediately. We also continued
to use C.C.C. help to the fullest extent possible. However, due
to the fire hazards which prevailed after June 20, and to our
inability to get a good job done by the C.C.C. men, they were
used largely to follow up the regular crews on fire patrol.

Later investigation indicated that a rather poor job of treating was done over the area which had been treated by the C.C.C. help as a good many trees had been missed, which was doubtless due to the inexperience of the men on this work, and to the failure of the project manager to properly supervise and instruct the men on the ground.

The combined spotting and treating 100% strip method was followed, and trees that could be safely reached were sprayed with oil and burned standing, and others were felled and burned with wood and oil.

Of The area treated during the Spring of 1933, the fall insect survey shows more new attacks than were treated during the Spring of 1933.

It is very conclusive the infestation on this district began to emerge from the endemic to the epidemic stage in 1931. It was the estimate of the four crew foremen last spring that the rate of spread would average 10 trees in the new attack to the 1 tree abandoned. Many examinations made of galleries by forest officers showed as many as 30 to 35 larva.

Mr. Despain's report of the fall survey shows that the infestation is in a very aggressive condition and will range as high as 5 trees in the new attacks to each tree in the previous year attack.

Control operations were first initiated on this district within this unit during the spring of 1931. No systematic survey had been made previously other than along the more accessible portions of Provo River, and by observations of the ranger in riding through the timber stands of the district. This control work was confined largely to the strip of Lodgepole Pine timber along Provo River. Likewise, some control work was also done during the spring of 1932, largely over the same area where control work was done along the spring of 1931.

The method used was burning standing with oil, and peeling by administrative use permittees who were given the timber with the requirement that all infested trees marked for cutting must be cut and thoroughly peeled.

With exception to the timber stands along the bottom of the canyon in Provo River, tributary to the road, the lodge pole pine timber on this unit as well as the Shingle Creek and Beaver Creek Units, are confined generally to very rough and rugged territory. Therefore, the cost of control work will be relatively high. Any camps located off the Provo River Road will have to be packed in by pack horse.

Beaver Creek Unit No. 2 and Shingle Creek Unit No. 3.

No control work of importance had been done on either of these units. However, as stated in our insect survey report of November 8, it is recommended that control work be initiated on this district during the spring of 1934. Problems similar to those discussed under Provo River Unit apply to these Units.

General:

It is recommended that three camps be established on this district for the control work during the spring of 1934. These should be equipped for four crews, but probably three crews per camp are all that should be employed to begin with, and then if it is found that more help will be needed to complete the work before the close of the season, then crews can be organized in minimum of time.

Blacksfork District:

Please refer to our insect control report of December 1, 1932.

Smithsfork Unit, No. 1:

The clean-up of the control work on this unit, which was largely completed during the fall of 1932, was initiated during the spring of 1933, under the direction of Owen Despain as camp manager. Part of the untreated area as shown on the control map was reached from a camp on Horse Creek and the rest from a camp later located on Blacksfork.

Due to the development of the G.C. Corps, it was decided that the Ashley National Forest would complete the control work with G.C.C. help on the Gilbert Creek Unit of that forest, which was partially completed by this forest during the fall of 1932, and that they would also reach an untreated area in Section 14 T. 12 N, 116 W. which is in this unit, and tributary to the Gilbert Creek Unit.

Due to the inexperience and conditions which the G.C.C. men work, this area was not treated during the spring of 1933.

Horse Creek, Unit No. 2:

All areas as shown on the 1932 fall insect control map, which were not treated during the fall of 1932, were treated during the month of June, 1933, as planned. It is interesting to

note that during the spring season of 1932, 24676 trees were treated on this unit, which were generally heavily infested, and that during the fall of 1932 and spring of 1933, only 1267 trees were treated, and in the main these were very light attacks. Ther per cent of reduction obtained here was 94.9 for the first year of treating.

No further control work is considered necessary on this unit during the spring of 1934.

Blacksfork Unit No. 3:

All areas as shown on the 1932 fall insect control map, which were not completed during the fall of 1932, were treated during the spring of 1933, except the scattering patches of Lodgepole in Wyoming, west of Blacksfork. It was necessary to leave this area untreated on account of the emergency condition on the Kamas District which was discovered, and on June 23, two of the four crews which were at work on the unit, were transferred to the Kamas District to help with the control work on the Provo River. However, the infestation within scattered patches of Lodgepole Pine in that portion of the unit was light, and it was questionable whether or not treating there was justified. Therefore, no particular harm was done by leaving these scattered patches untreated.

As discussed in the annual insect survey report, only relatively small areas will justify treating during the spring of 1934.

General:

Except for the clean-up work in the Blacksfork & Smithsfork Units, no other units on the Blacksfork District will need control work during the Spring of 1934.

Stockmore District:

No control work was done on this district during the calendar year of 1933. However, as discussed in our insect survey report of November 8, control work on the Upper and Lower Rock Creek and Duchesne Units is recommended.

COSTS INSECT CONTROL PROJECT, Wasatch National Forest.

A. G. NORD.

Inclusive dates work carried on: June 1, to June 30, 1933.

Forest Supervisor

Date this report made: November 10, 1933.

Insect responsible: *D. monticolae*.

	Contributed time and expense	Project funds	Total Cost
Salaries and wages	:	:	:
Expenses Forest officers	426.77	4,121.66	4,548.43
Subsistence	:	589.34	589.34
Equipment - purchase, re- pair, freight, etc.	:	165.33	165.33
Oil	:	250.00	250.00
Hauling, including Government trucks	:	424.40	424.40
Horse hire	:	303.00	303.00
Horse feed	:	298.50	298.50
Miscellaneous	:	18.70	18.70
Total cost of project	426.77	6,190.93	6,617.70

No. man days contributed 65

No. man days paid from projects funds 1046

Total man days used 1111

BUREAU OF ENTOMOLOGY
RECEIVED
★ DEC - 7 1932 ★
Coeur d'Alene, Ida. Station

December 6, 1932.

Insect Control, R-4
Wasatch

The Forester,

Washington, D. C.

Dear Sir:

Enclosed herewith is the Supervisor's report on the fall 1932 insect control work on the Wasatch and estimate for the work necessary on the Wasatch-Ashley project in the spring of 1933. There is also enclosed a map showing the location of the units and areas worked. We are sending this to you immediately upon its receipt without taking time to analyze it since it is our understanding that you are very anxious to receive this report at the earliest practicable date.

Very truly yours,

R. H. RUTLEDGE, Regional Forester,

C. B. Morse

Encl.

By

Acting.

Note: A copy of the map is being made for your files and will be forwarded as soon as completed.

Copy for information *Mr. Evenden*

BUREAU OF ENTOMOLOGY
RECEIVED
★ JEC - 7 1932 ★
Coeur d'Alene, Ida. Station

S
Insect Control-Wasatch
Blacksfork District

Salt Lake City, Utah
December 1, 1932-B

REPORT ON INSECT CONTROL WORK COMPLETED ON THE BLACKSFOK
DISTRICT OF THE WASATCH NATIONAL FOREST AND THE GILBERT
CREEK UNIT OF THE ASHLEY NATIONAL FOREST DURING FALL OF 1932

Reference is made to our annual report on insect infestation dated October 19, 1932.

Control work on the Blacksfork District was initiated on October 1, when one camp of 4 crews started control work on the West Fork of Blacksfork unit. On October 3 another camp of 4 crews began work on the upper portion of the Blacksfork unit, and on October 7 another camp of 3 crews which was later increased to 4 crews began control work on the lower portion of the unit on the area outside the forest boundary.

At each camp a forest officer, or men of Junior Forester training who had had considerable experience and training in insect survey and control work, were assigned to cruise out doubtful areas in order to definitely determine the areas where control work was or was not justified, thus avoiding the expense of crews working areas where there was very little or no infestation and assuring that all infested sections or parts thereof were treated.

At each camp a progress map on a scale of 4 inches to the mile was kept, and each day the definite area by sections treated during that day by crews was indicated by symbol. Within each area treated by sections during the day was shown the total number of trees treated, the date, and the location of groups of infested trees. In addition, each crew foreman kept notes on each tree, as to the height and degree of infestation, size of tree, etc. A good many section corners were located so that strips were definitely tied to the land survey with reasonable accuracy.

By keeping the record in this much detail which involved little or no additional expense, it will make it possible to make most any kind of an analysis desired in determining the reasons for any possible outstanding success or failure of the control work or portions thereof.

For the most part crews in all three camps were made up of picked men from the region of this and the Wyoming National Forest who had had previous insect control experience and who had proven to be reliable and conscientious workers, which are so important for the success of insect control work.

Special care was taken at all camps to make reasonably sure that all infested trees were thoroughly treated and that when the tree was left the "bugs were dead".

Where we were reasonably sure that all infested portions of the tree could be reached they were burned standing by peeling wood around the base and spraying the tree with oil. Otherwise they were felled and dry wood piled along the trunk and then burned with oil.

Discussion by units follows in the order treating progressed.

WEST FORK, UNIT NO. 4.

Control work was initiated on this unit this fall for the first time. One camp (Camp No. 1) with 4 crews under the direct supervision of George C. Larsen, Asst. Forest Supervisor of the Uinta National Forest, as camp manager, treated this unit and Dry West Fork Unit No. 3 between the period of October 1 and October 24 inclusive, with exception to about 5 crew day's work which was later completed by Camp No. 2, under the direction of Ed Keane, Junior Forester, as camp manager.

Two camp sites were occupied in this camp in treating these units; the first on the forest in Section 35 Township 2 N., R 11 E., and the second off the forest in Section 1, Township 2 N., R 11 E. The first camp site could be reached by truck, after some minor road work had been done, and the second was approximately 1 mile from the truck road, on a road which was passable to team and wagon.

The accessible timber which is largely lodgepole pine was largely cut over for ties by the Standard Timber Company some 15 to 20 years ago. However, considerable mature timber was left uncut, which was either inaccessible or too large for ties at that time. The infestation was first noticed in the Fall of 1931, in Section 36, Township 2 N., R. 11 E., on the area which is a survey shown by far the greatest infestation in the unit.

As will be noted by the survey report for this unit, 5113 new attacks were estimated, while only 1400 trees were actually found and treated during the control work. The survey indicated that 4400 acres should be treated while approximately 6200 acres were actually treated.

WEST FORT, UNIT NO. 5.

This unit is almost entirely off the Forest on private and public land and was treated for the first time this fall. The timber is predominantly lodgepole pine and like the other units on the Blackfoot drainage has been largely cut over for ties in past years, but a considerable amount of mature timber was left uncut. Part of the infestation was first discovered during June of 1932, when control work was being done on the Blackfoot Unit No. 2. However, due to lack of time and funds no control work on this unit could be done before the flight of the beetle last spring. As indicated above, the control work was done in connection with work on West Fort Unit between the dates of about October 15 and 25, by Camp No. 1 except 2 crew days work done by Camp No. 2.

On this unit the survey indicated 602 new attacks over 2500 acres, while in actual control work 410 trees and approximately 1000 acres were treated.

BLACKFOOT, UNIT NO. 3.

As stated in our report of October 19, this unit was only partially covered by the operations up to the spring of 1932. This applies mainly to that portion of the unit outside the forest boundaries on private and public land, since the area within the forest was pretty thoroughly covered during past operations, except that

when the control work was done during the spring of 1931 approximately 150 infested trees were known to have been left on account of lack of funds and to the extreme fire hazard which prevailed at that time.

The control work was first started during the spring of 1931, when a serious epidemic was discovered. This work was continued during the fall of 1931 and the spring of 1932. However, due to the fact that the unit as a whole was not thoroughly treated during these operations the infestation has no doubt been on the increase.

On October 8 Camp No. 2, under the direction of Junior Forester Ed Keene as Camp Manager, began work on the area outside the Forest boundary. Camp No. 1 was located at the East Fork Sanger Station and Camp No. 2 had two camp site locations; the first in Section 11, Township 2 N., R 12 E., and the second at the old Blackfork Commissary. All camp locations were accessible by truck.

This unit was thoroughly treated this fall, except approximately 10 day's work for 3 crews, which it is contemplated to finish during the spring of 1933 before the flight of the beetles. It is estimated there are approximately 4000 acres to cover and 1200 trees yet to treat.

SMITHFORK, UNIT NO. 1.

Our report of October 19 indicated that control work would not be started on this unit until the spring of 1933. However, we later found it possible to start active control work this fall and the unit was completed except about 5 crews day's work which was prevented on account of storms on November 6.

Camp No. 3 was moved from Blackfork to that portion of the unit within Utah on October 24 and Camp No. 1 was moved from West Fork Blackfork to that portion of the unit in Wyoming on October 25. On October 31 Camp No. 3 completed its portion of this unit and Camp No. 1 was moved out on November 7 when storms prevented further work. All camps were accessible to truck.

The infestation on this unit was confined to a larger percent of smaller trees than on other adjacent units. This accounts for the comparatively small amount of oil used per tree as shown on the summary sheet attached.

The survey indicated 4400 new attacks over 8960 acres, while in control only 5133 ²²²³² were treated and 7076 acres covered. It is estimated there are 160 trees over an area of 640 acres to treat next spring on this unit.

HORSE CREEK UNIT NO. 2.

Control work was first done on this unit during the spring of 1932, when 24,076 trees were treated over an area of approximately 7040 acres. This unit contained by far the heaviest infestation of any on the forest. The insect survey estimates 1580 new attacks this fall which are generally light attacks, and judging the area treated and further surveys that have been made by the control crews this fall, it appears that this estimate is fairly accurate.

Camp No. 3 was moved into this unit on November 1 and began control work on the following day. Intermittent storms delayed work to some extent when on November 7 it was necessary to discontinue further fall work and the camp was, therefore, moved out on that date.

During the period of work on this unit a total of 526 trees were treated over an area of 620 acres. On the two sections where the treating was done, the survey indicated 990 (10% cruise made) new attacks, or an average of 495 attacks per section. The above data would indicate that the number of new attacks on this unit will be slightly less than the number estimated by the survey.

It is estimated that a total of 1025 trees yet remain on the unit over an area of 2650 acres to be treated next spring. The estimated cost is \$1,700.00.

GILBERT CREEK UNIT (ASHLEY NATIONAL FOREST)

As per request of Assistant Regional Forester Morse, control work was begun on the Gilbert Creek Unit of the

Ashley National Forest this fall with the hope of completing it before weather conditions prevented further work. However, on November 6 snow prevented further work and, therefore, on November 7 the camp was moved out.

A total area of 1166 acres and 133 trees were treated on this unit by Camp No 1 and 3 from their camp locations on Smithfork. This treating was done on that portion of the unit where the infestation was lighter. Therefore, without a doubt the area yet remaining to be treated contains a greater number of trees per section than that treated this fall.

It is estimated there are 2770 acres to cover and 1200 trees to treat next spring. The estimated cost is \$1500 figured on 8 days work for a camp of 4 crews.

Summary of control work recommended by units during the spring of 1933.

<u>UNIT</u>	<u>Acres to cover</u>	<u>No. Trees</u>	<u>Total Cost</u>
Smithfork No. 1	640	160	\$ 200.00
Horse Creek, Unit No. 2	2850	1025	1700.00
Blacksfork, Unit No. 3	4000	1500	1800.00
Gilbert Creek (Ashley N.F.)	2770	1200	1500.00
(Total funds needed spring 1933) - - - - -			\$5200.00

See map attached for details of area treated.

PLAN OF CONTROL WORK RECOMMENDED FOR SPRING 1933

In organizing control forces for the spring work in 1933 it is believed that one camp of 4 crews should be first located on the Horse Creek unit and one camp of 3 crews on the Blacksfork unit. These camps, of course, to start work as early in the spring as practical. After the Horse Creek unit has been completed, the camp should be moved to the Gilbert Creek unit to finish this unit and the small remaining area on Smithfork in Section 12. The area to be treated in Section 1 - 33, and 6 partly in the Smithfork and Blacksfork unit can be reached from a camp at the Hewinta Ranger Station or the Standard Timber Company camp where one crew of the 4 crew camp should be stationed during the short time it will take to complete

this area. The area east of Blackfork Creek and north of the Utah Line can be reached by the camp on Horse Creek and with this arrangement it will avoid crossing the Creek when the water is high.

Sufficient oil for several days work is already on hand at Blackfork Commissary, Horse Creek, Mouth of Archie Creek and on the Gilbert Creek units. Some hay and grain is also at the Blackfork Commissary. A total of approximately 6000 gallons of oil is on hand at Carter Wyoming and at the above mentioned points which is ample to complete the work next spring.

If this plan is carried out, all areas on these units should be covered before considerable fire danger occurs and the cost of patrol after the work is completed should be very little, if ordinary conditions prevail.

TABULATION OF FUNDS EXPENDED FALL OF 1938 AND PORTION SPENT FOR WAGES

Total project funds expended

Wages direct	\$ 7703.43	.342 per cent
Subsistence	2121.24	.15 per cent
Horse Hire	456.78	.022 per cent
Horse feed	549.83	.036 per cent

Total spent which directly benefited local unemployment
\$10,891.30 - .76 per cent

A.O.Nord, Forest Supervisor

[illegible]

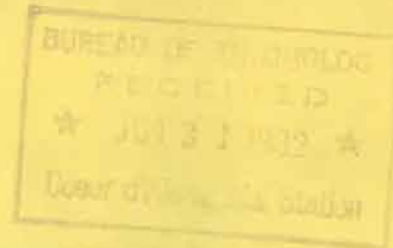
COSTS INSECT CONTROL PROJECT Sasatch NATIONAL FOREST

Inclusive dates work carried on October 1 to November 7, 1932

Date this report made December 8, 1932

Forest Supervisor

	Contributed Time and Expense	Project funds	Total Cost
Salaries and Wages		7703.43	7703.43
Temporary laborers			(Plus 945.55, 8-1/3%)
(Wages & Expense Forest Officers)	1977.49	374.48	2351.97
Equipment - purchase repair, freight etc.	321.34	321.34	321.34
Subsistence		2191.24	2191.24
Oil		1122.09	1122.09
Hauling, including Gov't trucks		1287.11	1287.11
Horse Hire		456.78	456.78
Horse feed		549.85	549.85
Miscellaneous		30.35	30.35
Total cost of Project 8-1/3% deduction	1977.49	14226.67 945.55	15204.13 945.55
Total project funds obligated	1977.49	15172.22	17149.71



Salt Lake City, Utah
October 19, 1932

S
Insect Control
Wasatch

ANNUAL REPORT ON INSECT INFESTATIONS

The bark beetle infestations have been occurring in varying degrees in portions of the lodgepole pine belt on both private and National Forest land along the eastern end of the Uinta Mountains. However, the epidemic infestations are recent and were entirely unknown prior to 1931, but through the reductions which have been made by control operations and from information gained through surveys and observations it is now certain that the remaining beetle epidemic attacks are confined to very limited areas.

Concurrently with the rising of the beetle infestations there has been a rise of the insect infestation attacking the alpine fir in many parts of the forest, the heaviest of which occurs on the Bear River drainage near the Whitney Ranger Station where from 5 to as much as 10 per cent of the stand has been destroyed.

Forest officers continue to observe occasional attacks of insects in the Engelmann spruce, but there has been nothing noticeable above a normal condition.

Report on the control work on the 1931 beetle attacks and the insect surveys conducted this season are attached hereto.

Samples of the forest insects submitted to the Bureau of Entomology for identification shows, according to James C. Evenden and rechecked by Dr. Blackman, that the beetle infesting the lodgepole pine here may be either *D. ponderosae* or *D. monticolae*.

One sample of beetle taken from Engelmann spruce from a tree south of the East Fork of Blacksfork Ranger Station has been identified by the Bureau of Entomology as the *D. murrayanae*. It is believed, however, that most of the attacks in the Engelmann spruce by the primary beetle are the *D. Engelmanni*. A former sample sent to the Bureau of beetle from this species of timber was identified as such.

A sample of insects attacking the alpine fir in Iron Mine Canyon of the Granddaddy Lakes District were also submitted to the Bureau of Entomology and had been identified by Mr. Evenden as the *Dryocoetes confusus*.

On the Blacksfork District, and in the unprotected forest area to the north of the National Forest where major control operations had been conducted and are now in progress there is plenty of evidence that the infestations of the bark beetle in the lodgepole pine have been in a rising and spreading epidemic condition over the past two or three years, in at least portions of the Blacksfork and west fork of Smiths Fork drainages. In the east fork of Blacksfork drainage and the Horse Creek area approximately 30,000 trees have been treated, and control operations are now in progress on the east fork of Blacksfork area, and if weather conditions remain favorable this area will be covered this fall.

Funds have not yet been made available to carry the control work into the west fork of Smiths Fork drainage excepting a very small area which was reached from the Horse Creek camp during the control operations last spring. Work is planned here in the spring of 1933, however, if funds are available.

The major control operations the spring of 1932 were centered largely in the Fort Bridger addition of Wyoming, the eastern portion of which was turned over to the Wasatch Forest for administration in March of this year. On the basis of available information the operations planned for the treatment of 4,000 trees. The final result, however, was the treatment of 24,676 infested trees. One camp was established on Horse Creek for the treatment of the Horse Creek unit, and as the season advanced and road conditions became more favorable camps were later established at the Commissary Cabin, one at a point near Duck Lake, and one at the east fork of Blacksfork Ranger Station. Upon conclusion of the work on June 30 a total of 27,619 trees were treated in the three units as shown by the project report.

We are continuing the control work on the Kamas district of the infestations in the lodgepole pine as can be handled through treatment by the contributed time of forest officers and through the disposal of the infested timber through administrative use. Ranger Parke has been successful in securing the removal of several infested trees by timber haulers each year. There are no known infestations which will require more than the contributed time of forest officers to hold within control.

The reductions made in the infestations on the Fall Creek unit, Rock Creek drainage, of the Granddaddy Lakes district through the operations of 1931 and 1932 have been most encouraging and very satisfactory results have been secured. The situation in this area has been brought completely under control.

By units, the insect situation is as follows:

BLACKS F O R K D I S T R I C T

West Fork of Smiths Fork, Unit No. 1

The survey indicates 4400 infested trees, and the attacks are reported to be moderately heavy, but the presence of numerous groups of new attacks is indicative of a rising epidemic condition. This unit joins the Horse Creek unit on the east from where the epidemic spread is believed to have been on a ratio of 4 to 1. Because of the scattered condition of the infestations and some of the difficulties attendant to early spring work, it is estimated that \$5500.00 will be required to properly clean up this unit. Control work here the spring of 1933, is therefore, recommended.

Horse Creek, Unit No. 2

Prior to the control work last spring this unit contained the heaviest infestations of the infested region. Through the control operation of last spring, the reduction has been from 24,676 trees which were treated, to 1550 new attacks as indicated by the survey this fall. The results are quite outstanding. It was estimated by Mr. Swartz and Asst. Sup. Betenson, and it is certainly my conclusion, that the epidemic in this unit has been rising on the ratio of 4 to 1, but since it is held by the Bureau of Entomology that the maximum rate of spread is about 3 to 1 I am using this basis in determining the result of the control work last spring, which indicates from the fall survey that the reduction was approximately 98 per cent effective at the close of the spring operation and before the 1932 flight.

It is evident, however, that the new attacks according to the survey this fall are also strong enough to indicate that the beetles are still in the epidemic stage and should be further controlled. A mopping up job of the Horse Creek area the spring of 1933 is, therefore, recommended. The estimated cost on the basis of the insect survey, and recognizing the scattered condition of the new attacks is \$1937.00, or \$1.25 per tree.

East Fork of Blacks Fork, Unit No. 3

This unit was only partially covered by former control operations, and considerable of the work done has been in the nature of hot spotting the heaviest of the infestations. Records were not kept so as to get a close estimate on the rate of reduction on the infestation in this area. However, the reductions have been very favorable and from study and observation of the area worked the results are believed to be comparable to the results shown on the Horse Creek unit.

Control work here is in progress and the available funds from the fall allotment is believed to be sufficient to cover all area in the unit which heretofore had not been worked and to make the necessary mop up, providing, however, that weather conditions remain favorable for control work. In any event, any unfinished work can be completed next spring with existing allotments.

West Fork of Blacks Fork, Unit No. 4

Dry West Fork of Blacks Fork, Unit No. 5

Control work here is in progress and available funds from the fall allotment is believed sufficient to cover all infested area. None of the area in either of these units have heretofore been worked.

No infestations were found by the insect survey in either of the following units:

Muddy Creek, Unit No. 6

Stillwater, Unit No. 9

Hayden's Fork, Unit No. 10

By reason of the low endemic stage of the few attacks discovered in the Mill Creek unit No. 7 and Bear River, Unit No. 8, no control work is planned. Further investigation will be made by Forest officers, however, to determine the desirability of a project for controlling the infestations here through the contributed time of Forest officers.

KAMAS DISTRICT

Provo River, Unit No. 1

This includes the area on both sides of the Provo River drainage between Shingle Creek and Spring Canyon.

On the basis of present information the only rising infestation which has been discovered here was on an area north of the Noblitts area on the Uinta Forest where 40 trees were treated last spring. An examination was made this spring by Rangers Parke and Davis and there were six infested trees found here.

These Forest officers continued to mop up scattering infestation on other portions of this unit, cleaning up a total of 75 trees, 52 of which were disposed of under administrative use. The number disposed of from the same area in 1931 was 268. The condition of the attacks was reported to be light and scattering.

The ranger, with the help of the Forest officer on the Great Lake Timber Company sale, is making surveys and constant checks for infestations, and is treating infested trees or disposing of them through administrative use when found. Additional surveys will be made by Forest officers this fall and next season in an effort to keep the infestation, regardless of the stage, on the decline. No control work is planned here other than that which can be handled by the regular personnel. About \$7.00 will be needed for the purchase and delivery of oil.

GRANDDADDY LAKES DISTRICT

Fall Creek, Unit No. 1

There were 155 trees treated in 1931. The unit was again worked this spring as a mop up operation and 28 trees were found and treated. Attacks were reported to be light and scattering. The area covered was about 1,000 acres.

Reductions of the infestations here through past operations have been very effective. No control work is, therefore, planned here in 1933, but the area will be kept under observation by the regular personnel for possible future attacks.

Miners Gulch, Unit No. 2

The Miners Gulch infested area is about 12 miles south of the Fall Creek area. The ranger made a reconnaissance of it during September of this year and discovered 22 trees. Five infested trees was the largest number found in any one group, and the strength of the attacks generally were reported to be moderate. Time did not permit of a closer investigation of this area, but the ranger estimates that \$158.00 will clean up this infestation. See the map attached to the survey report.

On the basis of the information which the ranger was able to assemble from this survey we desire to initiate control work there next spring, at the same time gain more information as to the extent of the infestation in this area. An allotment, therefore, of \$158.00 for spring work is, therefore, recommended.

The mature lodgepole pine on private and National Forest land in the Uinta Mountain area is approximately one and three-quarters billion feet and represents a little over one-third of Utah's supply of timber suitable for saw material. As far as can be determined the epidemic outbreak in the lodgepole pine in the Blacks Fork district was the first one of any consequence in recent years, or since the creation of the National Forests. There are signs, however, to indicate that serious epidemics occurred in this region about 150 years ago, through which large areas of timber were destroyed. But with our present background of information of the rise of the infestation here it is evident that the beetles in this general region are in the cycle of an epidemic and threatening spread into the remaining mature lodgepole pine stands.

Therefore, its complete control is timely and now appears certain with a spring operation 1933, the conclusion of which will indeed be a victory in Forest management.

SUMMARY OF RECOMMENDATIONS FOR SPRING CONTROL WORK IN 1933

West Fork of Smiths Fork Unit	(Initial control work	\$5500)
Horse Creek Unit	(Mopping up	1937)
Miners Gulch Unit	(Initial control work	156)
Provo River Unit	(Purchase of oil	7)
	Total	<u>\$7600</u>

No additional insect control equipment will be required.

Map of the proposed control work for the spring of 1933 is attached hereto.

Respectfully submitted

A. G. WORD

Forest Supervisor

COSTS

BLACKS FORK

Insect Control Project Wasatch National Forest

Inclusive dates work carried on - 5/25 to 6/30/32

Dates this report made - October 18, 1932

	<u>Contributed time and expense</u>	<u>Project funds</u>	<u>Total Cost</u>
Salaries and wages		\$ 6708.46	\$ 6708.46
Salaries and expense Forest officers	\$2257.68		2257.68
Equipment-purchase repair, freight, etc.		590.75	590.75
Subsistence		1752.48	1752.48
Oil		2589.66	2589.66
Hauling, including Govt. trucks		581.61	581.61
Horse hire		443.37	443.37
Horse feed		520.98	520.98
Totals	<u>\$2257.68</u>	<u>\$13167.31</u>	<u>\$15444.99</u>
Less value of oil on hand		<u>435.00</u>	<u>435.00</u>
		<u>\$12752.31</u>	<u>\$15009.99</u>

A. G. NORD

Forest Supervisor

GRANDDADDY LAKES DISTRICT

Insect control Project Wasatch National Forest

Inclusive dates work carried on 6/18 to 6/25/32

	<u>Contributed time and expense</u>	<u>Project funds</u>	<u>Total Cost</u>
Salaries and wages		\$ 109.75	\$109.75
Salaries and expense Forest officers	\$ 32.81		32.81
Hauling, including Govt. trucks		14.40	14.40
Totals	\$ 32.81	\$ 124.15	\$156.96
28 trees	1.1717	4.4339	5.6056
1000 acres	.0328	.1241	.1569

A. G. NORD

Forest Supervisor

KAMAS DISTRICT

Provo River Unit

Insect control project Wasatch National Forest

**Inclusive dates work carried on during June and early part of
July, 1932**

	<u>Contributed time and expense</u>	<u>Project funds</u>	<u>Total Cost</u>
Salaries and expense Forest officers	\$79.30		\$ 79.30
Hauling, including Govt. trucks		\$ 1.19	1.19
Oil		9.85	9.85
Totals	<u>\$79.30</u>	<u>\$11.04</u>	<u>\$ 90.34</u>
92 trees	.8619	.1200	.9819
2560 acres	.0309	.0043	.0352

A. G. NORD

Forest Supervisor

SUMMARY OF INSECT CONTROL PROJECT - BLACKSPOK PROJECT

Dates project carried on 5/25 to 6/30/32

Wasatch

National Forest

Date this report made October 19, 1932

J. G. Ward
Forest Supervisor

Unit		Number of trees treated				Area		No. trees	Cost per tree			Cost per acre			Oil Used	
No.	Name	Standing		Felled		Total No.	Covered	treated	Direct	Contri	Total	Direct	Contri	Total	Total	Gal
		No.	%	No.	%	treated	(acres)	per				buted		buted		gals; per
								acre								tree
<u>BLACKSPOK DISTRICT</u>																
1	West Fork of Smithfork	66	100	None		66	1280	.03	1.50	.081	1.581	.0773	.0041	.0814	62	.939
2	Horse Creek	22778	92	1898	8	24,876	7040	3.50	.418	.082	.50	1.457	.238	1.755	17669	.716
3	East Fk of Blackfork	2796	97	81	3	2,877	5120	.56	.81	.0775	.887	.455	.043	.498	2063	.717
Date of Project		June and July, 1932					<u>KANAS DISTRICT</u>									
1	Provo River	92	100	None	-	92	2560	.04	.86	.12	.98	.004	.031	.035	92	1.
Date of Project		6/18 to 6/25/32					<u>GRANDDADDY LAKES DISTRICT</u>									
1	Fall Creek	-	-	28	100	28	1000	.028	4.44	1.17	5.61	.13	.03	.16	none	-

SUMMARY OF INSECT SURVEY

Timber type Lodgepole pine
 September 1 to 19 inclusive
 Dates of cruise

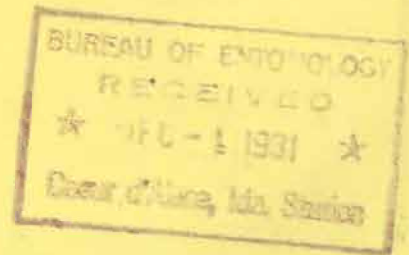
Insect causing damage D. ponderosae, or D. monticolae
Blacksfork District

Wasatch National Forest
Forest Supervisor

(1) Unit No.:	(2) Name	(3) % of cruise	(4) No. trees treated	(5) % of new attacks	(6) Character of infestation	(7) Acres Treated	(8) Acres to be treated	(9) Estimated cost of treating
			Spring (Year)	Spring (Year)		Spring (Year)	Spring (Year)	Total ; Per ; Per tree
1	West fork of Smithfork	1 1/2	66 Spring 1932	4400	*	b 1280 Spring 1932	8960 Spring 1933	5500 .612 1.25
2	Horse Creek	1 1/2	24676 Spring 1932	1550	6	b 7040 Spring 1932	2880 Spring 1933	1937 .027 1.25
3	East Fork of Blacksfork	1 1/2 (10% on 2 sections)	2877 Spr. 1932 450 Fall 1931 1989 Spr. 1931	6524	2.27	b 5120 Spr. 1932 1280 Fall 1931 1920 Spr. 1931	14080 Fall 1932	8155 .56 1.25
4	West Fork of Blacksfork	1 1/2	None	5128	-	b None	4480 Fall 1932	6390 1.43 1.25
5	Dry West Fork	1 1/2	None	692	-	b None	2560 Fall 1932	865 .34 1.25
6	Muddy Creek	1 1/2	None	None	-	None	-	- - -
7	Mill Creek	1 1/2	None	None	400	c None	-	- - -
8	Bear River	1 1/2	None	None	30	c None	-	- - -
9	Stillwater	1 1/2	None	None	-	-	-	- - -
10	Hayden Fork	1 1/2	None	None	-	-	-	- - -
GRANDDADDY LAKES DISTRICT, Date of Cruise September 1932								
2	Miner's Gulch	5 - 20	None	125	No previous control work	b None	1280 Spr. 1933	156 .12 1.25

*Only very small part of area treated
 **Area surveyed, acres.

(COPY)



November 16, 1931.

S
Insect Control
Wasatch

Memorandum for Regional Forester:

Reference is made to our insect control report of October 29. Since Ranger Hann has concluded his fall insect control work on Blacksfork he has submitted additional information concerning the extent of the infestation.

A total of 300 infested trees were treated this fall but the work was necessarily terminated through lack of funds for a full cleanup. As a result of the more intensive work, however, Ranger Hann has been able to more closely estimate the work to be done, regarding which, he reports as follows:

"The treatment was over the same area treated last spring. There was no apparent spread of the attack in regard to area covered although on the areas treated there was nearly as many trees per acre to treat as was treated last spring.

"The attached map sheet for Sec. 2 referred to above will give some indication of the intensity of the attack on this area. Over 300 trees were treated on the area shown which is less than 120 acres. The total cost of the job was \$494.86.

"Since the survey made early in the fall the work covered by this report has indicated that there will be a larger job for next spring than formerly anticipated. In view of the number of trees found on the area covered this fall there appears to be nearly as many to treat next spring as treated last spring. In fact, I wish to correct my earlier estimate by doubling it.

"I believe, if necessary to get thorough treatment, we should follow a fall and burn campaign next spring by the combined spotting and treating method. It will be most feasible to use two crews which would be kept busy about one month."

Instead of 800 trees to treat in 1932 it is now estimated there will be near 1600 trees and the estimated cost of the work will be \$2000 instead of \$1000. This will raise the forest estimates to \$2700 for handling next spring's beetle control operations.

We hope, therefore, to have this revision made in our allotments accordingly.

(Sgd.) A. G. NORD

Forest Supervisor.

Aranda

BUREAU OF ENTOMOLOGY
RECEIVED
★ NOV - 2 1931 ★
Care of Area, Ida. Station

F. S. D-4
RECEIVED
OCT 31 1931
FOREST MANAGEMENT
Ans.

S
Insect Control - Wasatch
Cost Spring 1931

October 30, 1931-B

Memorandum for Regional Forester:

The following is a report on costs of insect control work by projects done on this forest during the spring of 1931.

KAMAS DISTRICT

Total insect control funds expended - - - - -	\$101.51
Contributed time, Ranger Parks, May -	\$27.00
June	5.70
	<u>32.70</u>
Total cost - -	\$134.30

There was a total of 61 insect infested trees treated by the standing and burning method, and 207 other infested trees were spotted and disposed of peeling the bark from the trees, which was done by timber sale operators under the administrative use regulations. The cost per tree is being figured on the total number treated, regardless of method.

Total cost per tree - $\$134.30 \div 268 = .501$

BLACKFOOT DISTRICT

Total insect control funds expended - - - - -	\$ 2,183.82
Less value of 432 gallon oil on hand - - - - -	<u>84.88</u>
	2,098.94
S&E Funds expended - - - - -	<u>75.36</u>
Insect control funds allotted on account of wrecking truck on spring job - - - - -	<u>350.00</u>
	2,524.30

Contributed time:

Betenson - May	\$201.00	
June	<u>176.00</u>	377.00
Hann - May	133.59	
June	<u>137.64</u>	271.23
Phinney June	65.54	<u>65.54</u>
		<u>734.79</u>

Total Cost - \$3,257.31

Number of trees spotted:

Inside National Forest
Outside "

1981
1971

2172

Number of trees treated:

Inside National Forest
Oil burning method
Felling & burning

1450
489

1879

Outside National Forest
Oil & burning method
Felling & burning

100
10

110

Total treated - - - 1969

Cost per tree - ~~XXXXX~~ \$3887.31 + 1969 = \$1.935

GRANDDADY LAKE DISTRICT

Insect control funds expended - - - - - \$214.33
Less value of oil on hand - - - - - 45.60
Contributed time: 469.73

Phinney - May - - - - - 107.10
Total cost - - - - - 574.83

Total number of trees treated 155.

Cost per tree - \$574.83 + 155 = \$3.709

Summary of Cost for Forest

Kansas District \$ 134.50
Blackfork " 5,257.31
Granddady L. " 574.83

\$5,966.44

Number of trees treated:

Kansas District 268
Blackfork " 1969
Granddady L. " 155

Total trees treated 2172

Cost per tree for Forest:

\$5,966.44 + 2172 = \$2.745

V.C. Ward, Forest Supervisor

Insect Control
Watch

Handwritten signature

October 29, 1931-B

BUREAU OF ENTOMOLOGY
RECEIVED
★ NOV - 2 1931 ★
Cedar of Maine, Ida. Station

RECEIVED
OCT 31 1931
FOREST MANAGEMENT
D-4

Memorandum for Regional Forester:

The following is a report on insect infestation on this forest. Please refer to our insect infestation report of October 22, 1930.

KANAB DISTRICT

The infestation on this district is mainly confined along Provo River from Shingle Creek to Shady Dell and a very few isolated trees on the side area of the Great Lakes Timber Company sale area. Systematic control measures were initiated on this district during April and May of this year and a total of 868 Lodgepole pine trees were spotted for treatment. Of this number 61 were treated by the oil and burning method and the remainder were felled and peeled by timber operators and disposed of under administrative use.

Ranger Parke has made a survey of a part of the area this fall and he estimates that there are 150 insect infested trees on the area which will need treating next spring, and that an allotment of \$200.00 will be needed to complete the work to a high standard.

HALESBERRY DISTRICT

Systematic control measures were initiated on this district last spring for the first time, and our experience has proven that we have a much more serious outbreak than was thought at the time of our report in 1930, and the big majority of them are *sp. minor and minor*. The infestation is confined mainly on the east slope of Halesberry or Blackhawk from section 14-15, T. 2 N., R. 12 E (which is outside the forest) south along this Lodgepole pine timbered slope to end including section 8 and 9, T. 1 N., R. 12 E., S.L.M., (inside the forest). A few isolated infested trees were also found on the west slope of this drainage in section 24 and 25, T. 2 N., R. 12 E.

During the spring of 1931, 1172 trees were spotted, but on account of the allotted funds becoming exhausted and the lateness of the season, only 1939 trees were treated. Of this number 1550 were treated standing by the oil method and 459 felled and burned. Ranger Helm made a 10 per cent reconnaissance of this area this fall and from the information gained calculated there were yet 1500 trees to treat. Of this number 1000 are on the forest and 500 on private land adjacent to the forest. He estimates that for every tree that was left untreated last spring we have at least a 5 to 1 increase.

A partial fall control job has just been completed on this unit and approximately 450 trees were treated. On account of insufficient funds it was necessary to discontinue the work.

Figuring the trees that were treated this fall, it is now estimated that there will be approximately 800 trees to treat during the spring of 1932, and an allotment of \$1000 will be needed for a cleanup job. All the trees treated this fall were on forest land.

GRANDDADDY LAKES DISTRICT

Control measures were initiated on Rock Creek last spring for the first time. Experience gained from the work indicates that the infestation is in an endemic stage and more or less stationary. Infested trees were found singly and in groups of not more than five. Few trees were found to be heavily infested with beetle.

A total of 155 trees were treated during the spring control work and these were widely scattered.

A survey of the area was made this fall and nowhere was it found where we had more than a 1 to 1 increase.

We have no definite estimate of the number of trees on this area, since the survey was made by a forest guard and one temporary man, and in the guard's report he failed to indicate the total estimated number of trees. However, it is estimated that at least 200 trees will be in need of treating and that an allotment of \$500 will be necessary in order to accomplish the work. This probably will seem high for the number of trees to treat, but on account of the very scattered condition of the trees, and the inaccessability of the area, high cost per tree is unavoidable.

All necessary equipment for the next spring's operations is on hand and, therefore, the main cost will be for labor, oil, and subsistence supplies, etc.

Summary of Costs:

Kansas District - - - - -	\$ 200.00
Blacksfork District - - - -	1,000.00
Granddaddy Lakes District -	<u>500.00</u>
Total funds needed for forest	\$1,700.00


A.C. Nord, Forest Supervisor

INSECT CONTROL SUMMARY

Year:	Name of Unit	Forest:	Duration of Project:	Tree Species:	Insect:	Method:	Area:	No. Trees:	Per Cent:	Expenditures:	Total Cost:	Total Cost:	Total Cost:	Oil Used:	No. Man:	Per Cent:	Results:
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1931	Provo River Unit	Wasatch	5-20 - 6-20	L.P.P.	D. monticolae	S.W.O.A F.A.P.	300 approx.	268 S1	77	101.51	32.79	134.30	.501	447f	1.1		
	Blacksfork Spring	"	5-11 - 6-20	"	"	S.W.O.A F.A.B.	2900	1989 S1	19.2	2522.52	734.79	3257.31	1.633	-			
	Upper Rock Creek	"	5-15 - 6-10	"	"	"	400	155 S1		467.75	107.10	574.85	3.709	.937	-		
7-1 - 12-31	Provo River Spring, 1932	"	Aug. & July 1932	"	"	S.W.O.A F.A.P.	2560	92 S2		11.04	79.30	90.34	.98	.035	.939		
to 6-30-32	Smiths Fork No. 1 Spring	"	5-20 - 6-30	"	"	S.W.O.A F.A.B.	1280	66 S2	8	99.00	6.35	105.35	1.59	.08	.939		
	Horse Creek Unit N. 2 Sp.	"	5-20-7-1-32	"	"	"	7040	24676 S2	8	10306.57	2033.43	12340.00	.50	1.755	.716		
	Blacksfork No. 3 Fall 1931(	"	10-11-10-24	"	"	"	200	373 F1	60.6	494.86	58.33	553.19	1.48	2.76	.92	95)	
	Spring 1932(	"	6-14-6-30	"	"	"	5120	2877 S2	3	2330.37	222.97	2553.34	.887	.498	.717)	
	Fall Creek - Spring	"	6-18-6-25-32	"	"	"	1000	28 S2	100	124.32	32.76	157.08	5.61	.16	-		
7-1-1932	(Provo River Spring 1933	"	6-11-7-1-33	"	"	"	3240	0 3113 S-33	2.4	3136.94	312.57	3449.51	1.108	1.06	.78	618	
	(Smiths Fork No. 1 Fall '32(	"	10-23-11-7	"	"	"	7976	✓ 2133 F32	12.4	2824.09	371.14	3195.23	1.498	.402	.805	415	
	Spring '33(	"	6-20-6-26-33	"	"	"	640	0 82 S-33	4.1	305.40	21.42	326.82	3.98	5.10	1.10	35	
to 6-30-1933	(Horse Creek, Fall 1932 (	"	11-1-11-7-32	"	"	"	820	✓ 526 F2	28	870.00	102.57	972.57	1.849	1.169	1.42	81	
	Spring 1933(	"	"	"	"	"	4840	0 741 S3	20.5	2046.17	133.51	2179.68	2.941	.45	1.16	278	94.9
	(Blacksfork No. 3 Fall '32(	"	10-1-11-7-32	"	"	"	12860	✓ 4674 F2	26	7286.76	958.17	8244.93	1.764	.631	1.37	829	
	Spring '33(	"	"	"	"	"	1440	✓ 276 S3	.35	702.42	59.27	761.69	2.75	.527	1.14	115	
	(West Fork No. 4, Fall '32 (	"	10-1-10-25	"	"	"	6258	✓ 1406 F2	15.1	2377.55	347.10	2724.65	2.009	.453	1.69	491	
	(Dry West Fork No. 5 Fall '32	"	10-15-10-25	"	"	"	1022	✓ 418 F2	20.6	660.64	50.16	710.80	1.70	.695	1.84	105	

5660 - 1267

Spring 1931 - 2712
 Fall 1931 - 373
 Spring 1932 - 27.739
 Fall 1932 - 9.157
 Spring 1933 - 4.212

* Number spotted same as number treated.
 S.W.O. Standing with oil.
 F.B. Felled and burned.
 F.P. Felled and peeled.

1932 - 3/2 his per A

INSECT CONTROL SUMMARY

Year: (1)	Name of Unit (2)	Forest: (3)	Duration of Project (4)		Tree Species: (5)	Insect: (6)	Method: (7)	Area: (8)	No. Trees: (9)	Felled: (10)	Expenses: (11)		Total Cost: (13)	Total Cost: (14)	Total Cost: (15)	Oil Used: (16)	No. Man: (17)	Per Cent: (18)	Results: (19)
			Incl. Dates:								Proj. Funds:	Cont. Time and/or Project:							
1931	Provo River Unit	Wasatch	5-20 - 6-20		L.F.F.	D. monticolus	*S.W.O.A P.A.P.	300 approx.	268	77	101.51	32.79	134.30	.501	4474	1.1			
	Blackfork Spring	"	5-11 - 6-20	"	"	"	S.W.O.A P.A.P.	2900	1989	19.2	2522.52	734.79	3257.31	1.633	-				
	Upper Rock Creek	"	5-15 - 6-10	"	"	"	"	400	155		467.75	107.10	574.85	3.709	.937	-			
7-1-12-31	Provo River Spring, 1932	"	June 8 July 1932	"	"	"	S.W.O.A P.A.P.	2560	92		11.04	79.30	90.34	.98	.035	.939			
to 6-30-32	Smiths Fork No. 1 Spring	"	5-20 - 6-30	"	"	"	S.W.O.A P.A.P.	1280	66	8	99.00	6.35	105.35	1.59	.08	.939			
	Horse Creek Unit N. 2 Sp.	"	5-20-7-1-32	"	"	"	"	7040	24676	8	10306.97	2033.43	12340.00	.90	1.755	.716			
	Blackfork No. 3 Fall 1931(	"	10-11-10-24	"	"	"	"	200	373	60.6	494.86	58.33	553.19	1.48	2.76	.92	95		
	Spring 1932(	"	6-14-6-30	"	"	"	"	5120	2877	3	2330.37	222.97	2553.34	.887	.498	.717			
	Fall Creek - Spring	"	6-18-6-25-32	"	"	"	"	1000	28	100	124.32	32.76	157.08	5.61	.16	-			
7-1-1932	Provo River Spring 1933	"	6-11-7-1-33	"	"	"	"	3240	3113	2.4	3136.94	312.57	3449.51	1.108	1.06	.78	618		
	Smiths Fork No. 1 Fall '32(	"	10-23-11-7	"	"	"	"	7976	2133	12.4	2824.09	371.14	3195.23	1.498	.402	.805	415		
	Spring '33(	"	6-20-6-26-33	"	"	"	"	640	82	4.1	305.40	21.42	326.82	3.98	5.10	1.10	35		
to 6-30-1933	Horse Creek, Fall 1932 (	"	11-1-11-7-32	"	"	"	"	820	526	28	870.00	102.57	972.57	1.843	1.169	1.42	81		
	Spring 1933(	"		"	"	"	"	4840	741	20.5	2046.17	133.51	2179.68	2.941	.45	1.16	278	94.9	
	Blackfork No. 3 Fall '32(	"	10-1-11-7-32	"	"	"	"	12860	4674	26	7286.76	958.17	8244.93	1.764	.631	1.37	829		
	Spring '33(	"		"	"	"	"	1440	276	.35	702.42	59.27	761.69	2.75	.527	1.14	115		
	West Fork No. 4, Fall '32	"	10-1-10-25	"	"	"	"	6258	1406	15.1	2377.55	347.10	2724.65	2.009	.593	1.69	491		
	Dry West Fork No. 5 Fall '32	"	10-19-10-25	"	"	"	"	1022	418	20.6	660.64	50.16	710.80	1.70	.685	1.84	105		

* Number spotted same as number treated.
S.W.O. Standing with oil.
P.B. Felled and burned.
P.F. Felled and peeled.